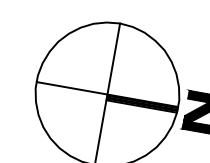
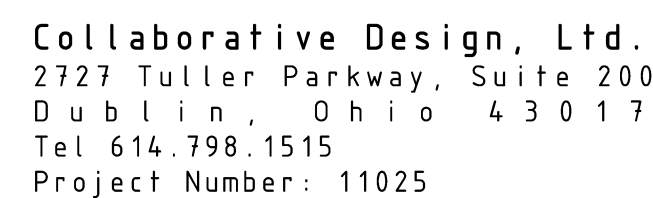


MECHANICAL ROOM 3B-110 NEW WORK



DEDUCT ALTERNATE #2: DEDUCT ALL WORK ASSOCIATED WITH ADDING (2) NEW ROOF DRAINS AND ASSOCIATED STORM PIPING AS SHOWN IN THE "PLUMBING PARTIAL THIRD FLOOR PLAN AREA B" ON SHEET PL100. THIS COMPLETED WORK IS ASSOCIATED WITH THE ANCILLARY CARE PROJECT #517-316.

SOME OF THE PIPING SHOWN ON THIS SHEET IS NOT ON THE 3RD FLOOR OR THE 3RD FLOOR CEILING SPACE. SEE CODED NOTES AND DETAILS #2 & #3 ON SHEET PL500 FOR DETAILED LOCATIONS OF ALL PIPING.



JOHN D. BERRYMAN, M. D.

CHECKED BY:	JPA
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25801



EQUIPMENT SPECIFICATION - REVERSE OSMOSIS SYSTEM W/ DUPLEX COMPONENTS

PROVIDE AS INDICATED A FACTORY ASSEMBLED REVERSE OSMOSIS (RO) SYSTEM SHIPPED FOR EASE OF INSTALLATION AND START UP. THE SYSTEM SHALL BE OF AN APPROVED DESIGN AS FABRICATED BY A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF WATER TREATMENT EQUIPMENT. ALL EQUIPMENT AND MATERIAL SHALL BE SUPPLIED PER THE SPECIFICATIONS AS INTENDED FOR A COMPLETE AND OPERATIONAL SYSTEM.

QUALIFIED MANUFACTURERS OF WATER CONDITIONING EQUIPMENT SHALL BE ENGAGED IN THE MANUFACTURE OF THIS TYPE OF EQUIPMENT FOR A PERIOD OF NOT LESS THAN (10) YEARS.

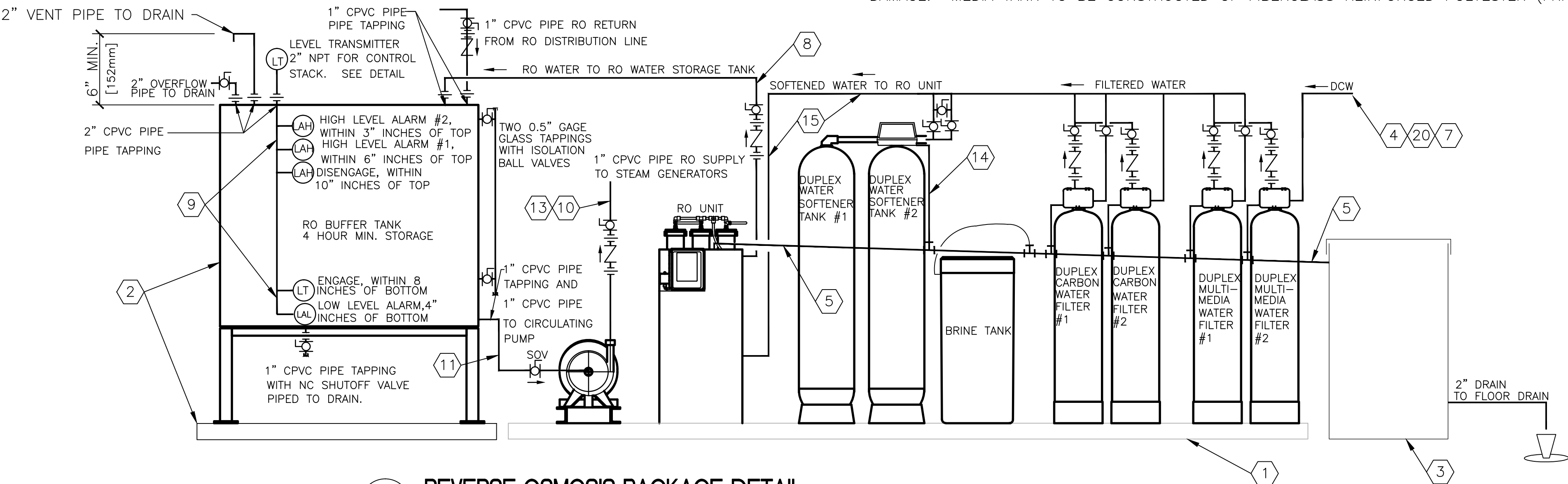
DESIGN PARAMETERS

DESIGN SYSTEM FLOW 1,000 GPD (RO MAKE-UP RATE; NOMINAL RATING)  
DESIGN SYSTEM FLOW 10 GPM AT 40 PSIG DISCHARGE PRESSURE  
(DISTRIBUTION TO SERVICE) DAILY HOURS OF WATER DEMAND 12-24 HOURS / DAY  
OPERATING WATER TEMPERATURE RANGE 55-77 °F  
ELECTRICAL REQUIREMENTS 120VAC, 1-PH, 60 HZ.  
SPACE ALLOWANCE (LXWXH) 204-IN X 30-IN X 83-IN (INCLUDING STORAGE TANK)  
DESIRED STORAGE CAPACITY 300 GAL. (ATMOSPHERIC TANK)

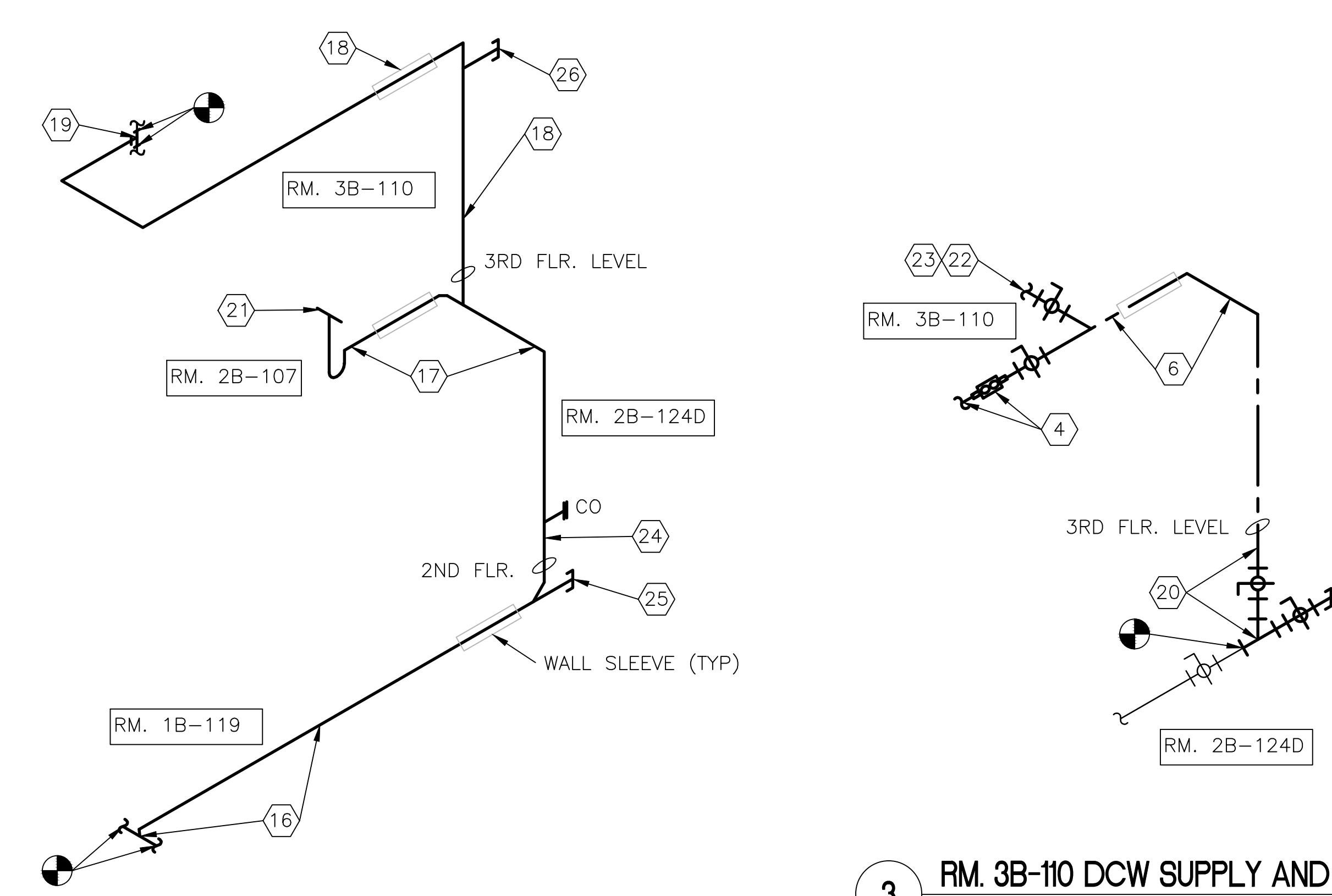
THE RO ELEMENTS SHALL BE THIN-FILM COMPOSITE (TFC), 2.5" DIAMETER WITH AN FRP OVERWRAP. ANTI-TELESCOPING DEVICE AND U-CUP BRINE SEAL. MEMBRANE LENGTH SHALL BE 21'. THE DESIGN SALT REJECTION SHALL BE 98% BASED ON 2000-PPM WATER AND 225 PSIG AT 77 DEGREES F.

THE RO ELEMENT HOUSINGS SHALL BE CONSTRUCTED OF PVC WITH PVC END CAPS. STAINLESS STEEL CLAMPS HOLD THE END CAPS IN PLACE. EACH HOUSING ASSEMBLY IS COMPLETE WITH ONE SET OF O-RINGS AND O-RING LUBRICANT.

THE PUMP SHALL BE A POSITIVE-DISPLACEMENT ROTARY VANE TYPE CONSTRUCTED OF STAINLESS STEEL. IT SHALL BE RATED BETWEEN 192 GPH AT A 225 PSIG DISCHARGE PRESSURE. THE PUMP SHALL HAVE 3/8" THREADED SUCTION/DISCHARGE CONNECTIONS. A NEMA STANDARD C-FACED ODP MOTOR SHALL BE DIRECTLY CLAMPED TO THE PUMP. THE MOTOR SHALL BE RATED FOR A 120 VAC, SINGLE-PHASE, 60 HZ. POWER SUPPLY. MOTOR HORSEPOWER SHALL BE 0.50 HPL.

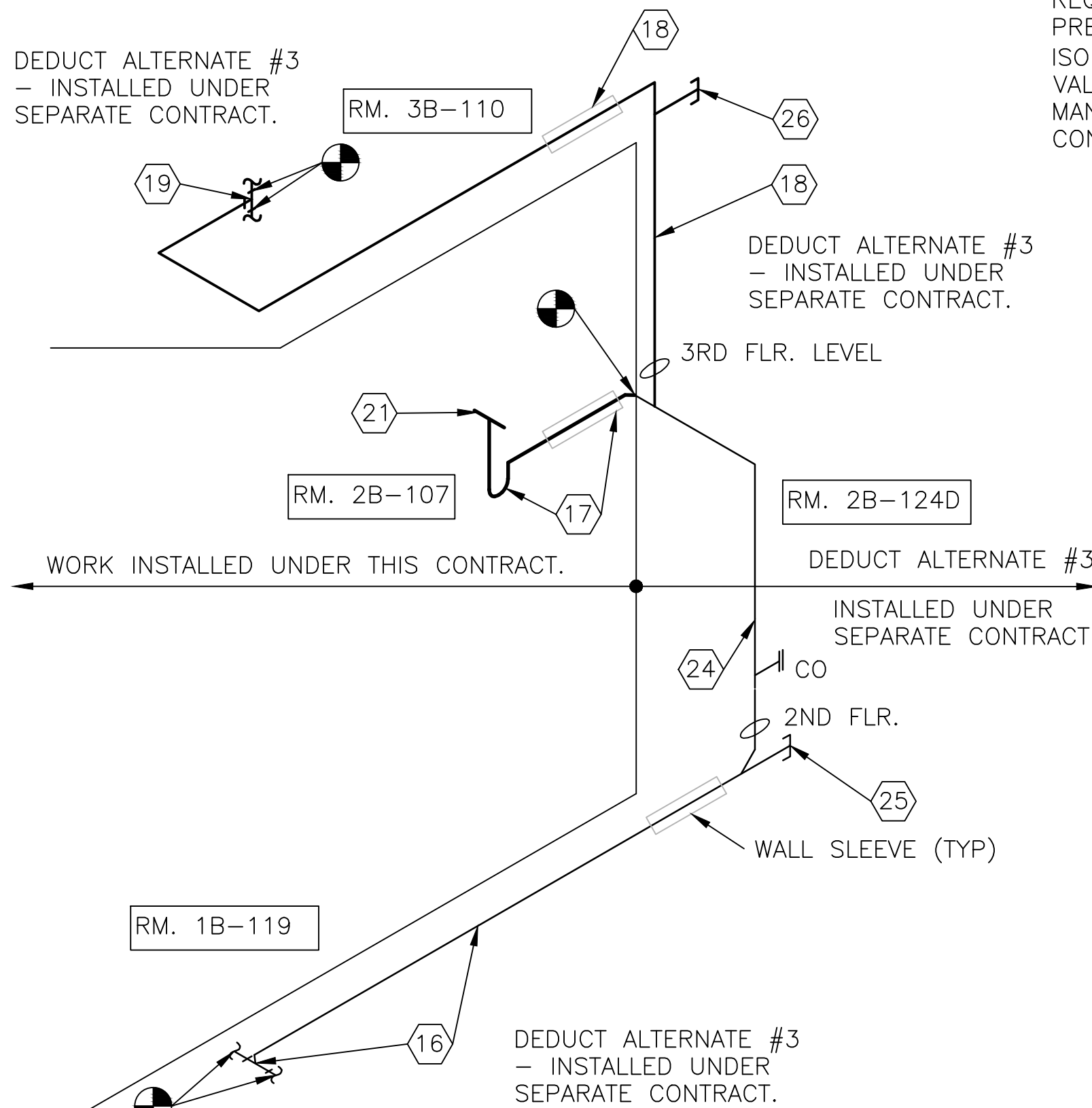


1 REVERSE OSMOSIS PACKAGE DETAIL



3 RM. 3B-110 DCW SUPPLY AND RISER

BASE BID



4 RM. 3B-110 FLOOR DRAIN STACK DEDUCT ALTERNATE #3

2 RM. 3B-110 FLOOR DRAIN STACK BASE BID

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APPROVED: INFECTION CONTROL  
SHAWN M. MILLS  
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APPROVED: CHIEF OF STAFF  
JOHN D. BERRYMAN, M. D.

DRAWING TITLE:  
PLUMBING  
DETAILS  
PROJECT TITLE:  
HVAC NEGATIVE AIR CORRECTIONS  
DATE 07/06/2012  
REV.  
SCALE  
CHECKED BY:  
JPA

DRAWING No.  
PL500  
PROJECT No.  
517-11-105  
DRAWN BY:  
JRC  
CHECKED BY:  
JPA

Veterans Affairs  
Medical Center  
200 Veterans Av  
Beckley, WV.  
25801

PUTTING VETERANS FIRST

CODED NOTES

- NEW R.O. SYSTEM ASSEMBLY ON SKIDS.
- NEW R.O. WATER STORAGE TANK. PROVIDE HOUSEKEEPING PAD.
- NEW 24"DIA. X 40"H R.O. DISCHARGE HOLDING TANK W/ 2" DRAN PIPE TO FUNNEL ON FLOOR DRAIN - PROVIDE FUNNEL. [USE SOFTENER MFG. BRINE TANK FOR HOLDING TANK.]
- NEW 1" DCW SUPPLY W/ RPBK TO R.O. ASSEMBLY. MAKE FINAL CONN. EXTEND RPBK RELIEF DRAIN TO FLOOR DRAIN.
- CONNECT 1" DRAIN PIPING TO R.O. ASSEMBLY AND EXTEND INTO HOLDING TANK WITH WATER-TIGHT RUBBER SEAL.
- INSULATED 1" DCW LINE FROM 2ND FLOOR CEILING SPACE. SLEEVE AND SEAL AT WALL AND FLOOR PENETRATIONS.
- CONNECT NEW 1" DCW LINE W/ ISOLATION VALVE INTO EXISTING 2" DCW IN 2ND FLOOR CEILING SPACE. (RO UNIT IN RM. #3A-111A)
- EXTEND 3/8" R.O. PERMEATE SUPPLY LINE FROM R.O. UNIT TO R.O. WATER STORAGE TANK.
- EXTEND CABLE FROM FLOAT CONTROL AT R.O. WATER STORAGE TANK TO PROPER GFI BOX; MAKE FINAL CONNECTIONS.
- 1" R.O. WATER PIPING FROM R.O. PUMP TO STEAM GENERATOR. MAKE ALL FINAL CONNECTIONS.
- 1" R.O. WATER PIPING FROM R.O. WATER STORAGE TANK TO R.O. PUMP SUCTION INLET. MAKE ALL FINAL CONNECTIONS.
- N/A
- STEAM GENERATOR BY HVAC CONTRACTOR.
- CONNECT 1" DRAIN PIPING TO SOFTENER ASSEMBLY AND EXTEND INTO HOLDING TANK WITH WATER-TIGHT RUBBER SEAL.
- 1" SOFTENER WATER PIPING FROM WATER SOFTENER ASSEMBLY TO R.O. UNIT. MAKE FINAL CONNECTIONS.
- CONNECT NEW 3" SAN. DRAIN PIPING TO EXIST. 4" SAN. DRAIN ABOVE DROP-IN CEILING IN RM. 1B-119. EXTEND INTO 1ST FLOOR POLICE AREA.
- MAKE OFFSET OF 3" SAN. STACK ABOVE 2ND FLOOR CEILING LEVEL AND THROUGH WALL INTO ROOM 2B-107 CEILING SPACE. PROVIDE PIPING AND TRAP FOR FLOOR DRAIN IN RM. 3B-110.
- 1-1/2" SAN. VENT UP AND THROUGH WALL INTO RM. 3B-110.
- CONNECT NEW 1-1/2" SAN. VENT INTO EXISTING 1-1/2" PVC SAN. VENT.
- CONNECT NEW 1" DCW LINE W/ ISOLATION VALVE INTO EXISTING 1-1/2" DCW IN 2ND FLOOR CEILING SPACE OF RM. 2B-124D. (RO UNIT IN RM. 3B-110); EXTEND 1-1/2" CAPPED PIPING FOR FUTURE CONNECTION FOR THE ANCILLARY CARE PROJECT #517-316.
- FLOOR DRAIN TYPE #FD-M W/ FUNNEL.
- PROVIDE TRAP PRIMER AND DISCHARGE INTO FLOOR DRAIN ABOVE THE STRAINER. SEE NOTE #23.
- PROVIDE 1/2" DCW BRANCH W/ ISOLATION VALVE TO TRAP PRIMER. SEE NOTE #22.
- INSTALL 3" DRAIN STACK THROUGH 2ND FLOOR AND UP INTO 2ND FLOOR CEILING LEVEL.
- EXTEND 3" CAPPED PIPING FOR FUTURE CONNECTION IN 1ST FLOOR CEILING FOR THE ANCILLARY CARE PROJECT #517-316.
- EXTEND 1-1/2" CAPPED PIPING FOR FUTURE CONNECTION IN 3RD FLOOR CEILING SPACE FOR THE ANCILLARY CARE PROJECT #517-316.

5 RM. 3B-110 DCW SUPPLY AND RISER

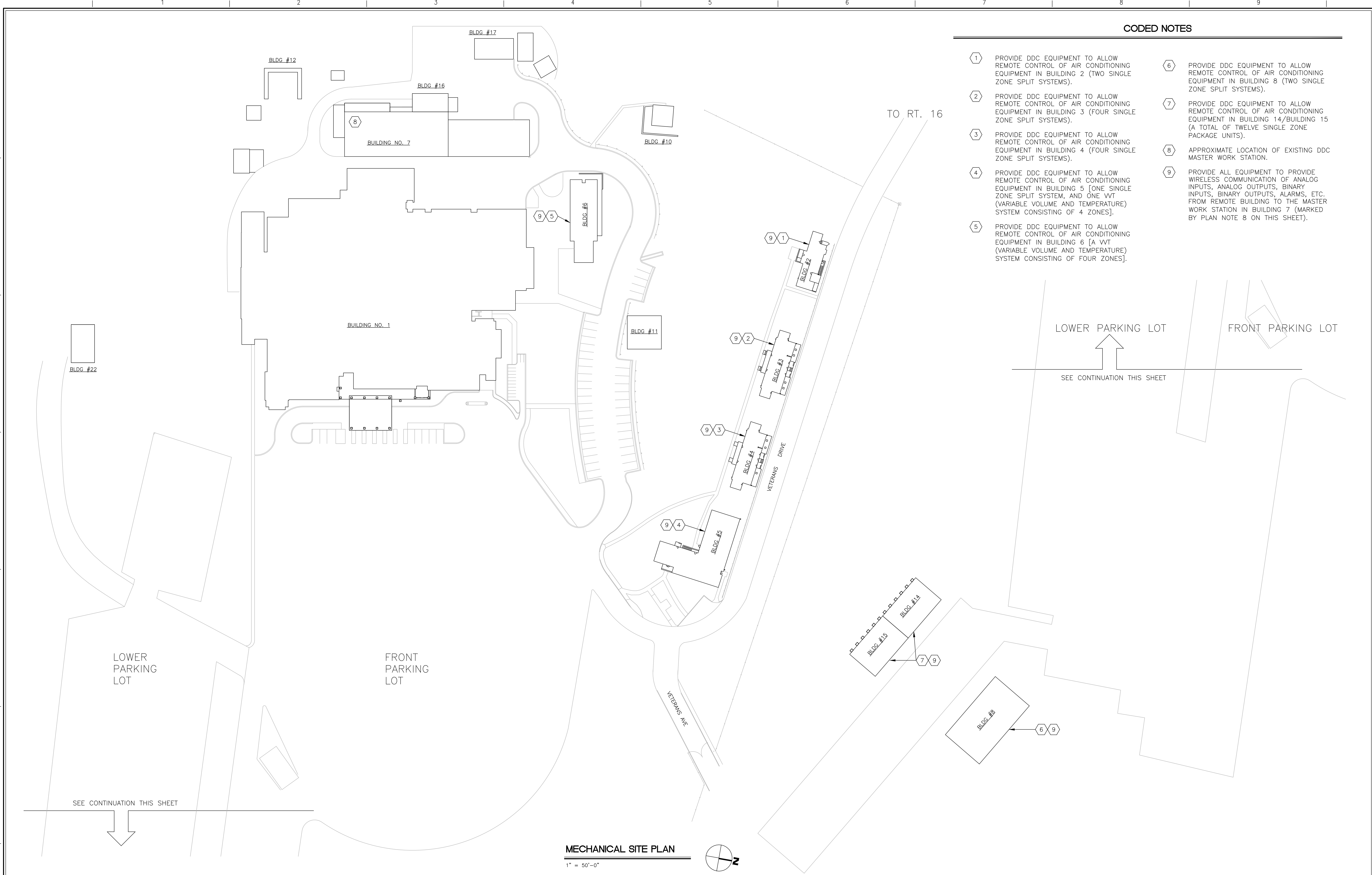
DEDUCT ALTERNATE #3



three inches = one foot  
one and one-half inch = one foot  
one-half inch = one foot  
three-quarters inch = one foot  
three-eighths inch = one foot  
one-quarter inch = one foot  
one-eighth inch = one foot

0 6 0 1 0 2 0 4 0 4 0 4 0 8 0 16 0 4 8 16

11007



CODED NOTES

- 1 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 2 (TWO SINGLE ZONE SPLIT SYSTEMS).
- 2 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 3 (FOUR SINGLE ZONE SPLIT SYSTEMS).
- 3 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 4 (FOUR SINGLE ZONE SPLIT SYSTEMS).
- 4 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 5 [ONE SINGLE ZONE SPLIT SYSTEM, AND ONE VVT (VARIABLE VOLUME AND TEMPERATURE) SYSTEM CONSISTING OF 4 ZONES].
- 5 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 6 [A VVT (VARIABLE VOLUME AND TEMPERATURE) SYSTEM CONSISTING OF FOUR ZONES].
- 6 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 8 (TWO SINGLE ZONE SPLIT SYSTEMS).
- 7 PROVIDE DDC EQUIPMENT TO ALLOW REMOTE CONTROL OF AIR CONDITIONING EQUIPMENT IN BUILDING 14/BUILDING 15 (A TOTAL OF TWELVE SINGLE ZONE PACKAGE UNITS).
- 8 APPROXIMATE LOCATION OF EXISTING DDC MASTER WORK STATION.
- 9 PROVIDE ALL EQUIPMENT TO PROVIDE WIRELESS COMMUNICATION OF ANALOG INPUTS, ANALOG OUTPUTS, BINARY INPUTS, BINARY OUTPUTS, ALARMS, ETC. FROM REMOTE BUILDING TO THE MASTER WORK STATION IN BUILDING 7 (MARKED BY PLAN NOTE 8 ON THIS SHEET).

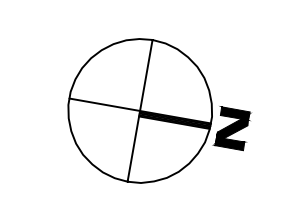
LOWER PARKING LOT

FRONT PARKING LOT

SEE CONTINUATION THIS SHEET

MECHANICAL SITE PLAN

1" = 50'-0"



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DRAWING TITLE:  
SITE PLAN  
MECHANICAL NEW WORK  
PROJECT TITLE:  
HVAC NEGATIVE AIR CORRECTIONS  
DATE  
07/06/2012  
REV.  
SCALE

DRAWING No.  
MS100  
PROJECT No.  
517-11-105  
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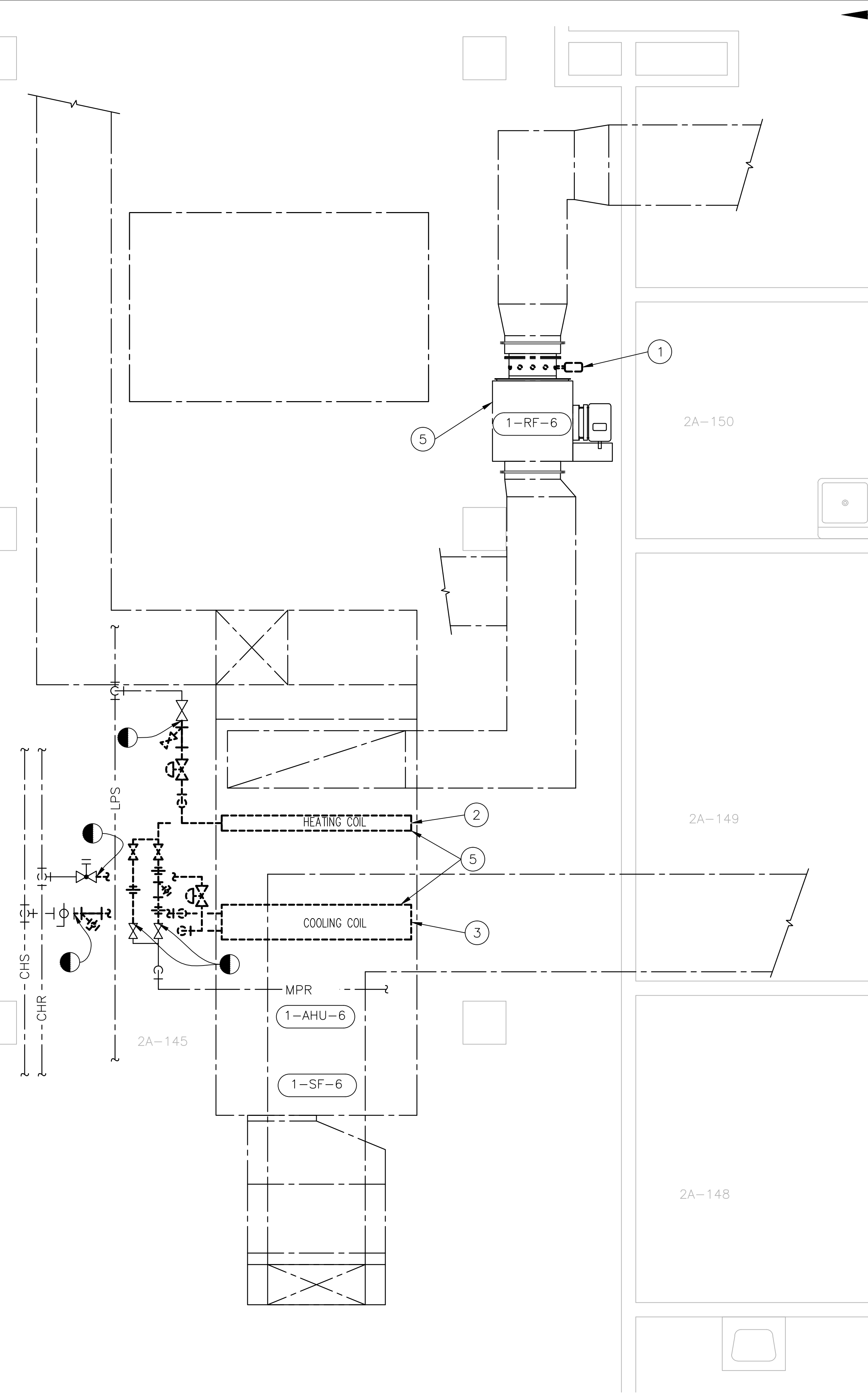
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25801



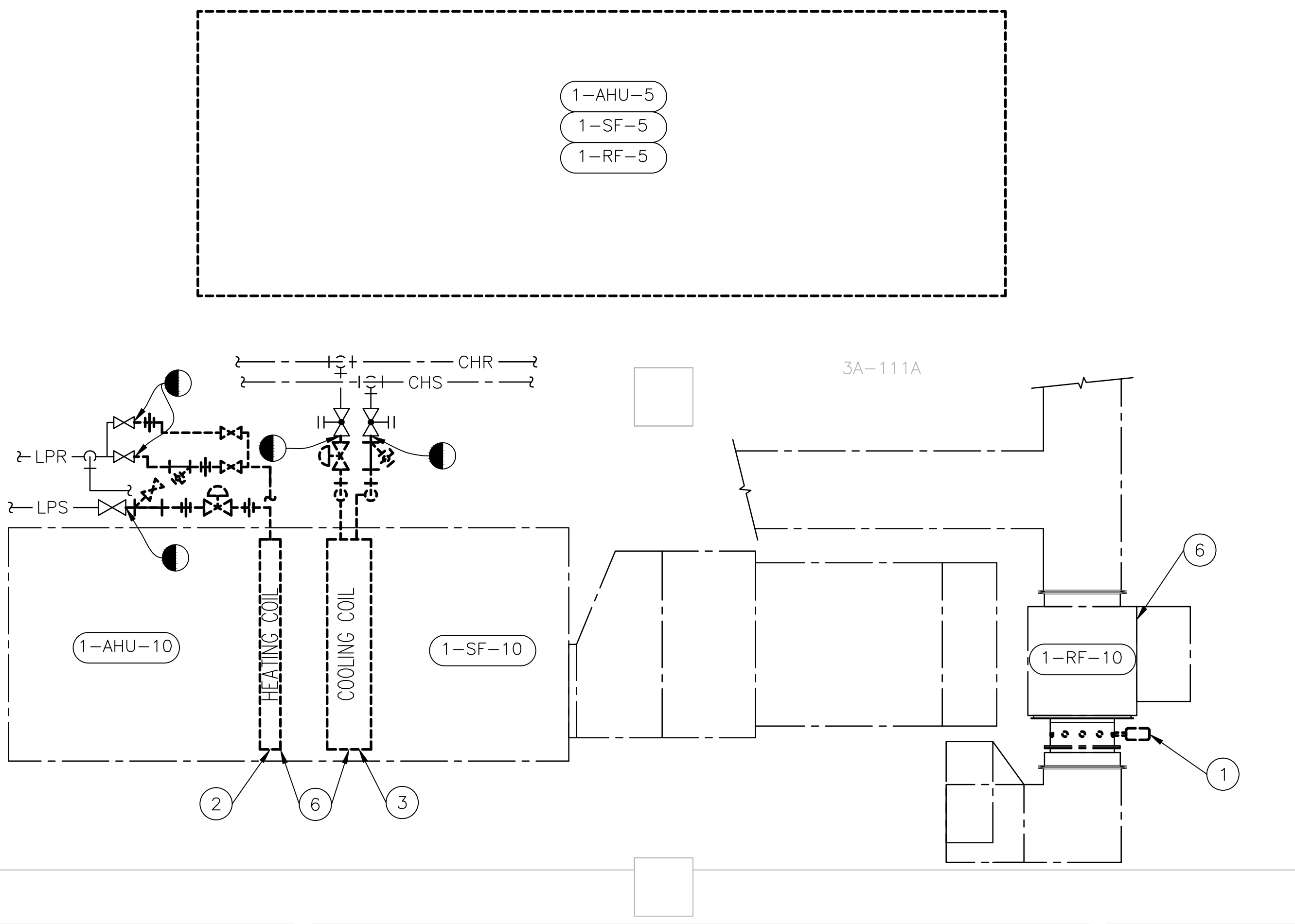
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three inches = one foot

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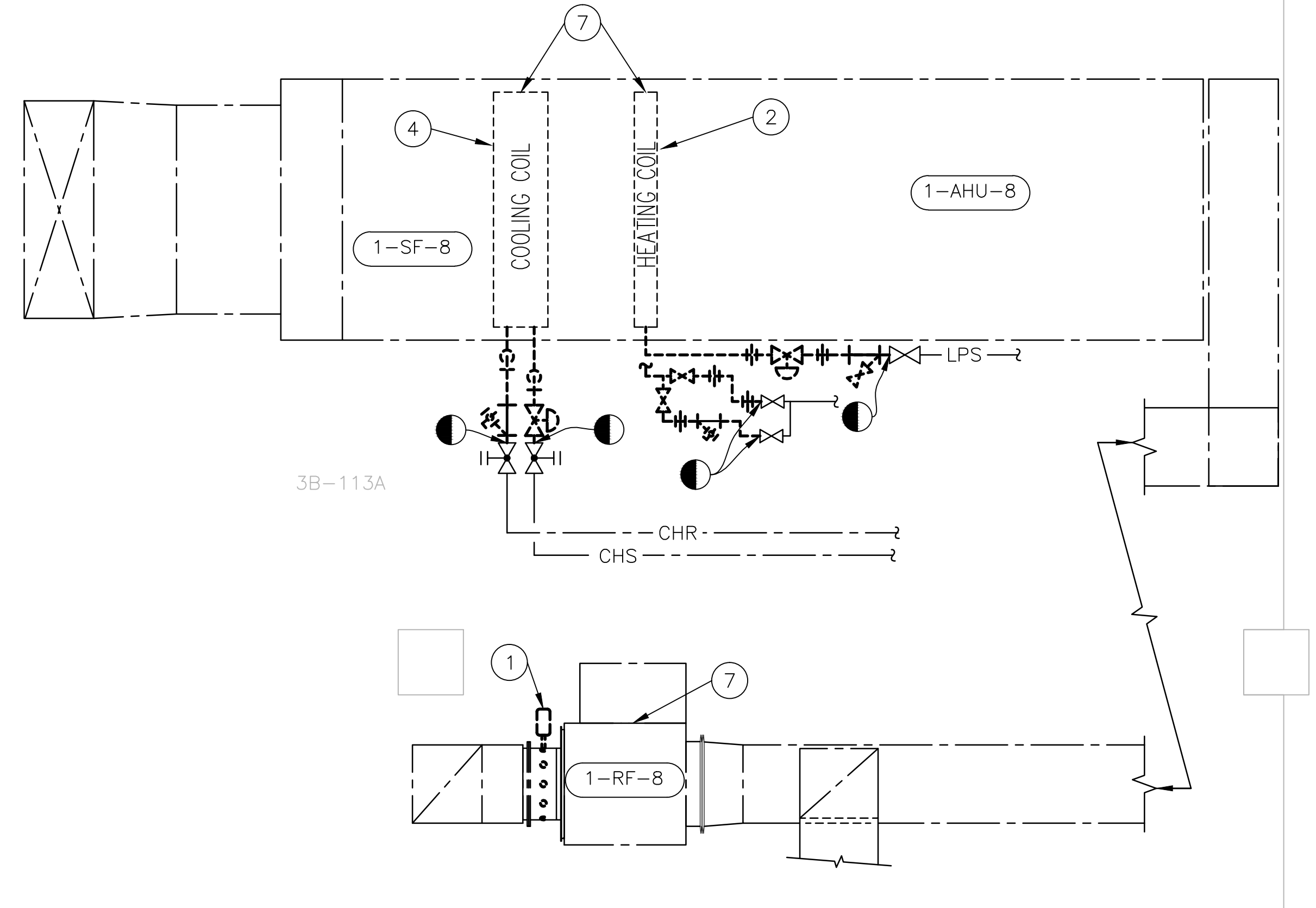
MECHANICAL PARTIAL SECOND FLOOR PLAN ROOM 2A-145  
1/2" = 1'-0" DEMOLITION



MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3A-111A  
1/2" = 1'-0" DEMOLITION



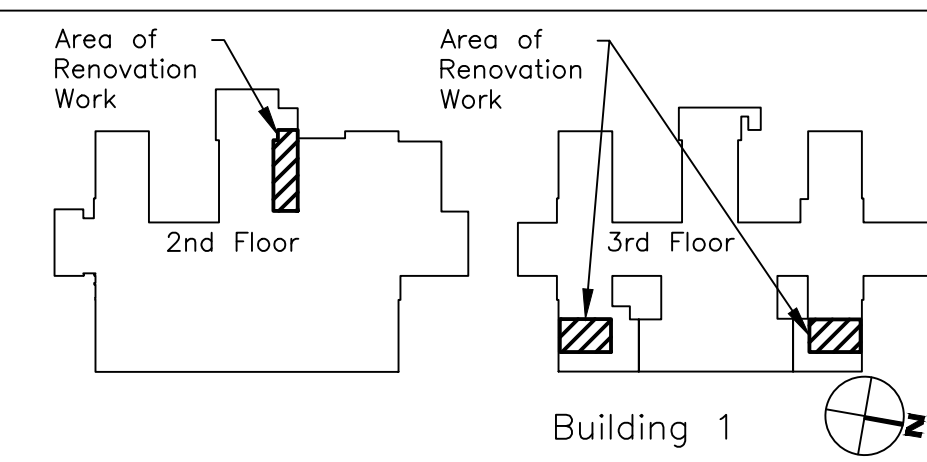
MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3B-113A  
1/2" = 1'-0" DEMOLITION



CODED NOTES

- 1 REMOVE VORTEX VANE SECTION FROM RETURN AIR FAN AND DUCTWORK. REMOVE VANES, PNEUMATIC MOTOR-OPERATOR AND LINKAGE. PERMANENTLY SEAL OFF PNEUMATIC CONTROL LINES AND TIE BACK TO CONDUIT. PLUG HOLES IN VANE HOUSING. REINSTALL MODIFIED UNIT BACK ON FAN AND DUCTWORK. (SEE DETAIL 14 ON SHEET MH501).
- 2 REMOVE STEAM HEATING COIL AND ALL PIPING AND APPARATUS BACK TO FINAL SHUT OFF VALVE SO MAIN SYSTEM DOES NOT HAVE TO BE DRAINED. REMOVE PNEUMATIC CONTROL VALVE AND PERMANENTLY SEAL OFF PNEUMATIC CONTROL LINES AND TIE BACK TO CONDUIT.
- 3 REMOVE CHILLED WATER COIL AND ALL PIPING AND APPARATUS BACK TO FINAL SHUT OFF VALVE SO MAIN SYSTEM DOES NOT HAVE TO BE DRAINED. REMOVE PNEUMATIC CONTROL VALVE AND PERMANENTLY SEAL OFF PNEUMATIC CONTROL LINES AND TIE BACK TO CONDUIT.
- 4 REMOVE CHILLED WATER COILS (THIS UNIT HAS TWO CHILLED WATER COILS) AND ALL PIPING AND APPARATUS BACK TO FINAL SHUT OFF VALVE SO MAIN SYSTEM DOES NOT HAVE TO BE DRAINED. REMOVE PNEUMATIC CONTROL VALVE AND PERMANENTLY SEAL OFF PNEUMATIC CONTROL LINES AND TIE BACK TO CONDUIT.
- 5 SEE DRAWING SHEET MH101 FOR NEW WORK.
- 6 SEE DRAWING SHEET MH102 FOR NEW WORK.
- 7 SEE DRAWING SHEET MH103 FOR NEW WORK.

REQUIRED STEAM AND CONDENSATE RETURN PIPE DEMOLITION SHALL BE APPROVED BY VA COTR. ANY STEAM SHUTDOWN SHALL BE COORDINATED WITH COTR.



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DRAWING TITLE:  
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MECHANICAL DEMOLITION  
PROJECT TITLE:  
HVAC NEGATIVE AIR CORRECTIONS  
DATE: 07/06/2012  
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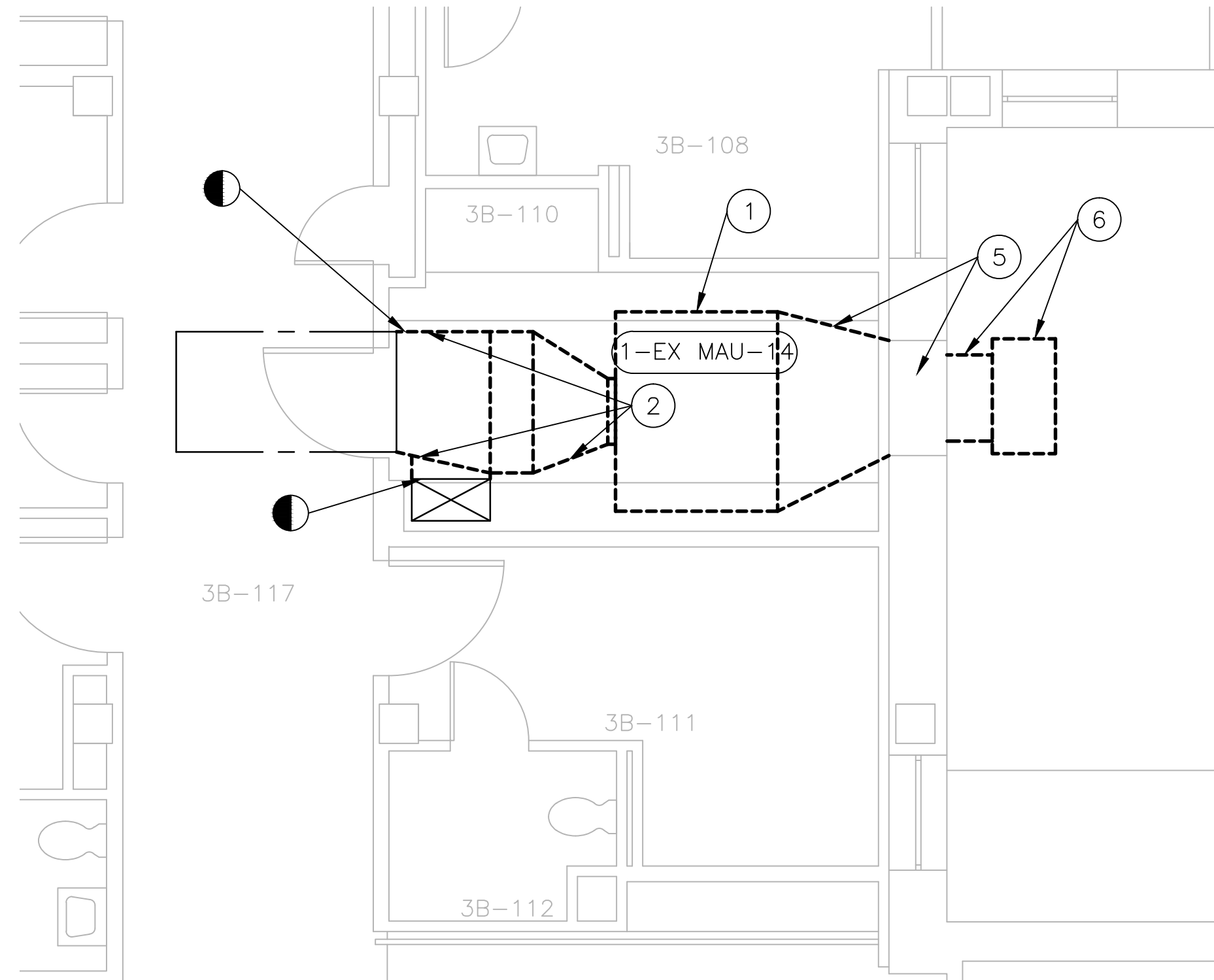
DRAWING No.  
MD100  
PROJECT No.  
517-11-105  
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PDC  
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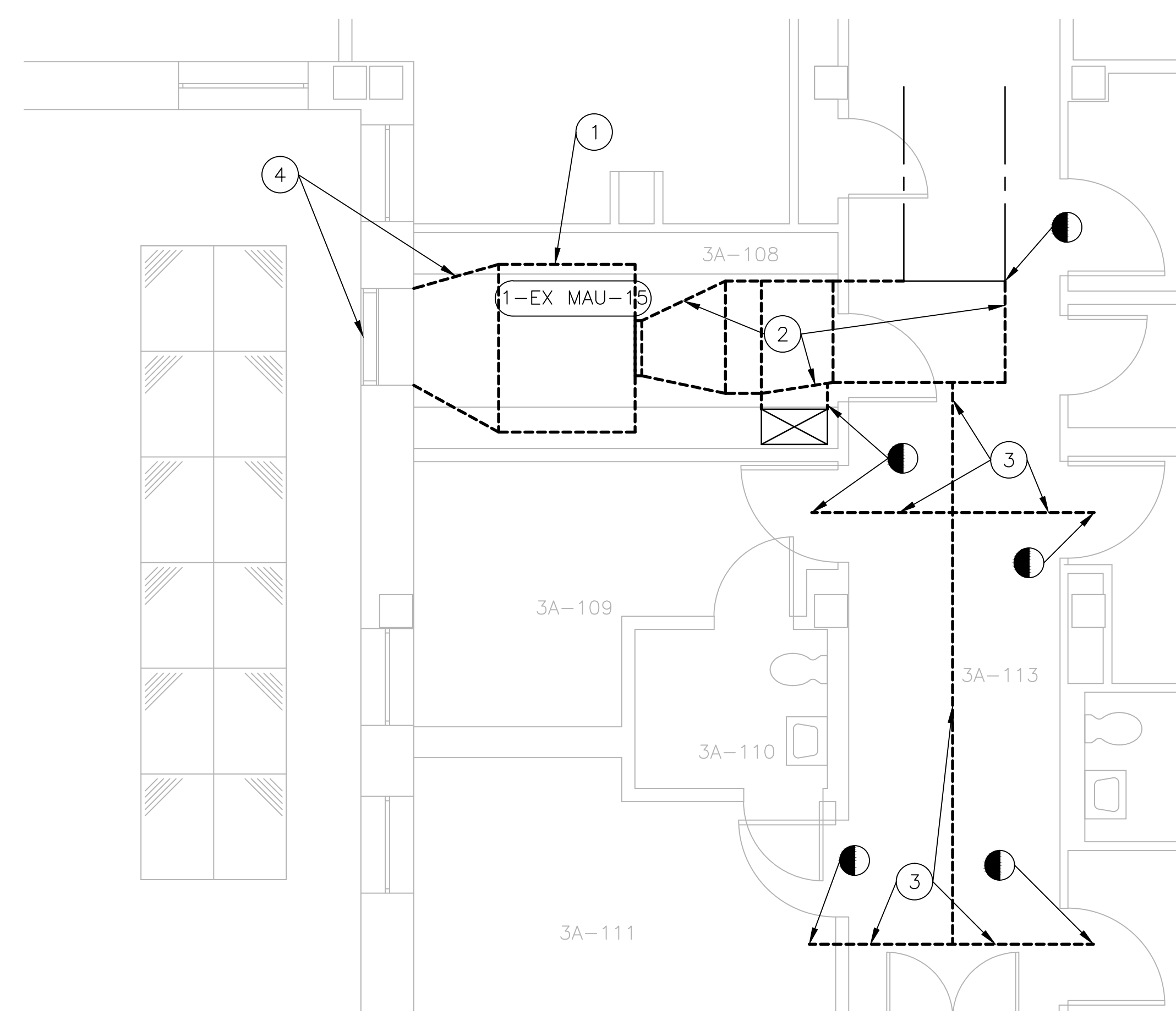


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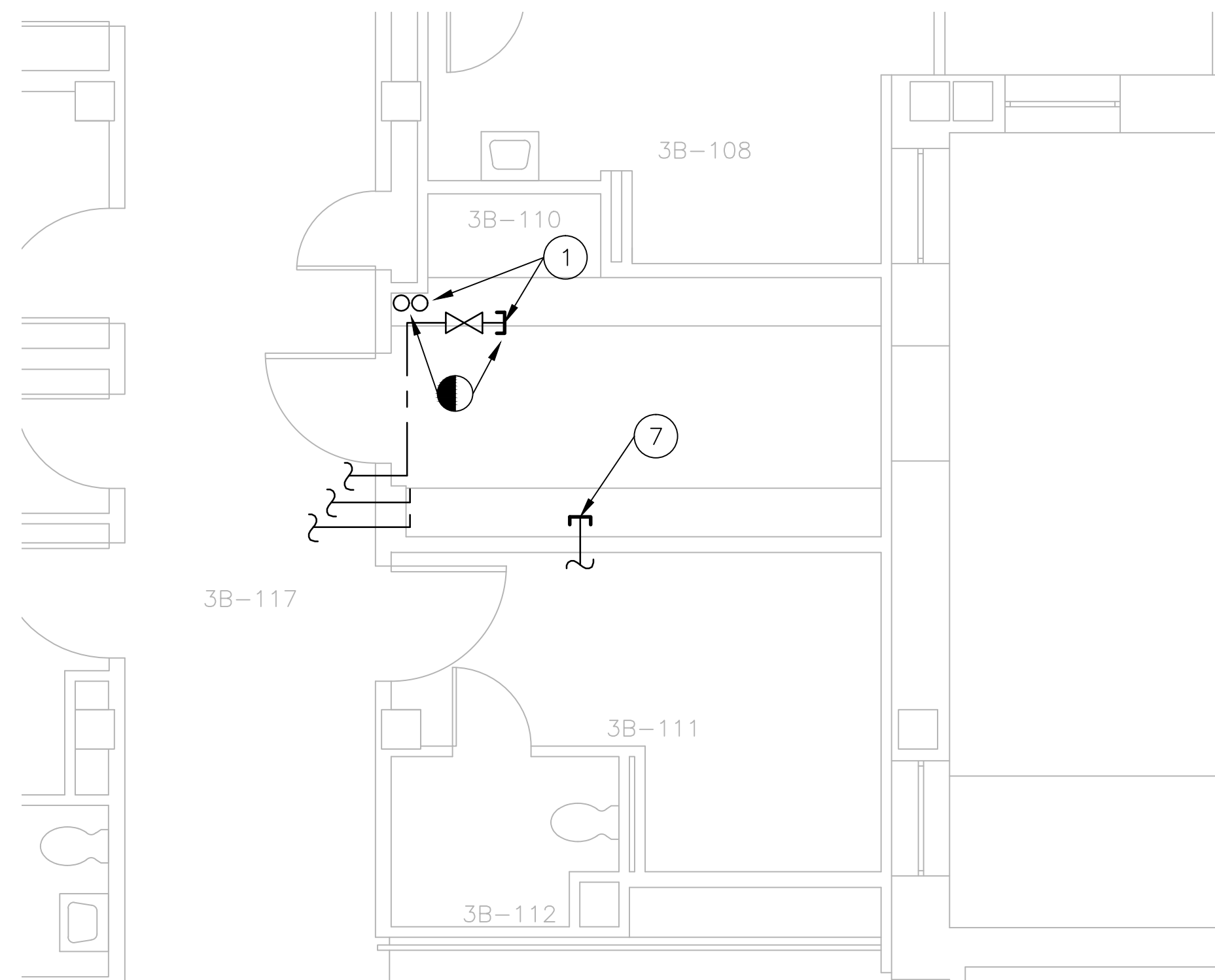
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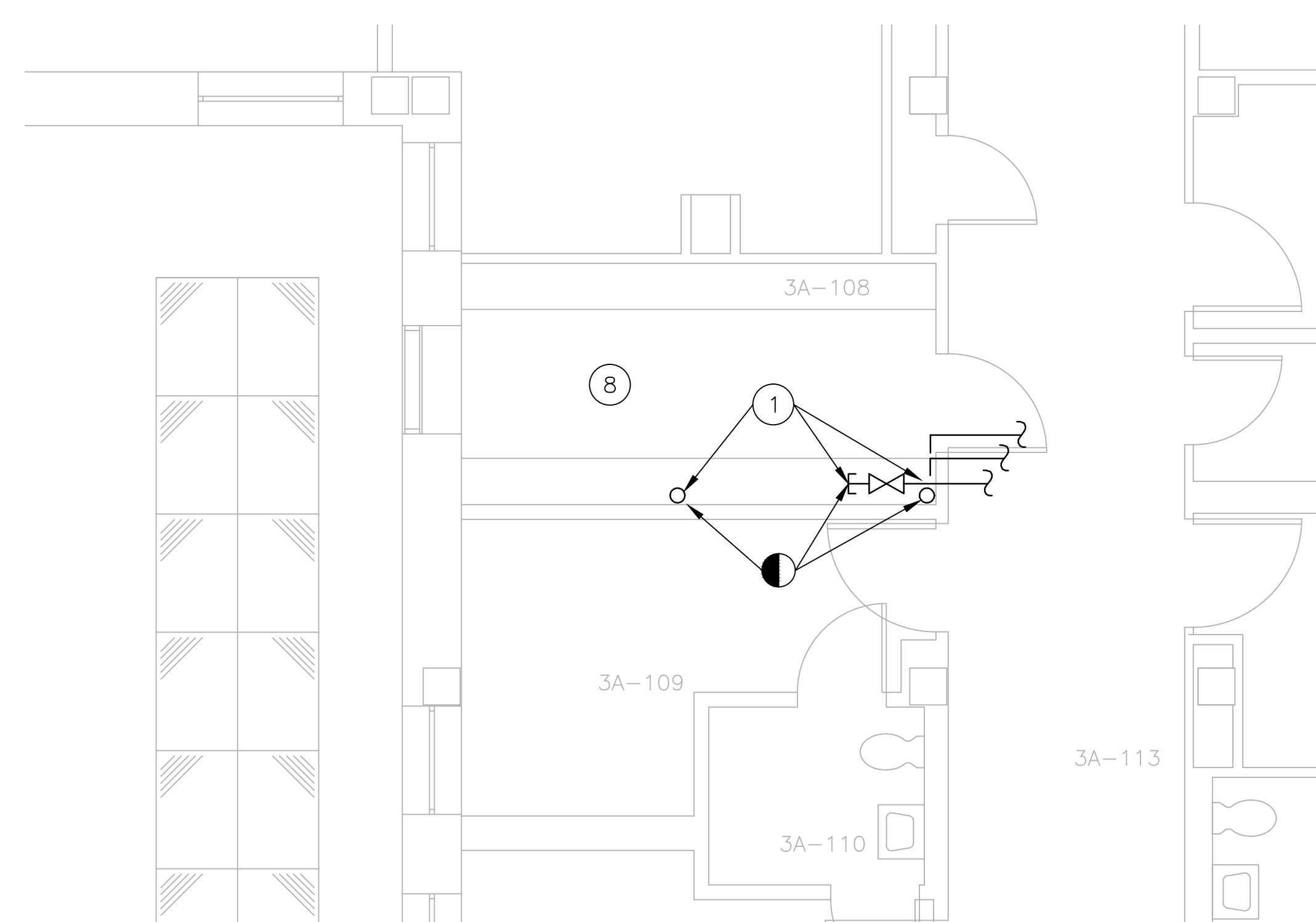
MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3B-110  
1/2" = 1'-0" DUCT WORK DEMOLITION



MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3A-108  
1/2" = 1'-0" DUCT WORK DEMOLITION



MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3B-110  
1/2" = 1'-0" PIPING DEMOLITION

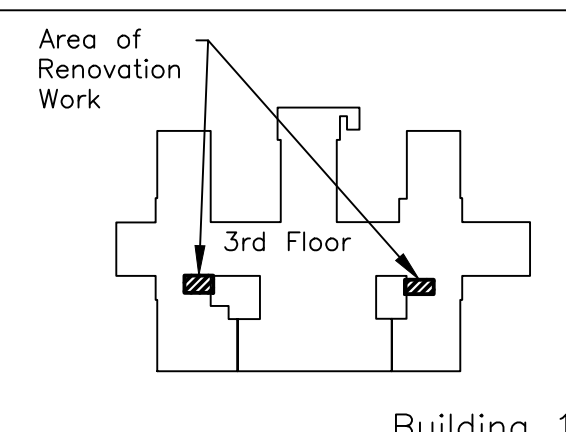


MECHANICAL PARTIAL THIRD FLOOR PLAN ROOM 3A-108  
1/2" = 1'-0" PIPING DEMOLITION

CODED NOTES

- 1 REMOVE MAKE UP AIR UNIT COMPLETE WITH COILS. REMOVE PIPING (CHILLED WATER SUPPLY AND RETURN, STEAM, AND CONDENSATE), ACCESSORIES AND CAP OFF AT LAST SHUT OFF VALVE IN ORDER NOT TO DRAIN MAIN SYSTEM. SEE DRAWING SHEETS MH102 AND MH103 FOR RECONNECTION OF PIPING TO NEW MAKE UP AIR UNITS.
- 2 REMOVE SUPPLY AIR DUCTS BACK TO INDICATED POINT OF DEMOLITION.
- 3 REMOVE THIS MAIN BRANCH SUPPLY AIR DUCT AND BRANCHES BACK TO CONNECTION AT FAN COIL UNITS.
- 4 REMOVE INTAKE AIR DUCT AND LOUVER. INFILL LOUVER OPENING TO MATCH EXISTING WALL CONDITIONS.
- 5 REMOVE INTAKE AIR DUCT. THE EXISTING WALL OPENING WILL BE USED WHEN INSTALLING NEW MAU-14. SEE DRAWING SHEETS MH103 AND MH105.
- 6 REMOVE INTAKE AIR DUCT UP TO THE ROOF MOUNTED INTAKE AIR HOOD. REMOVE THE ROOF MOUNTED INTAKE HOOD. THE EXISTING ROOF OPENING WILL BE USED WHEN INSTALLING NEW MAU-14. SEE DRAWING SHEET MH105.
- 7 EXISTING MAU-14 TO BE REMOVED (SEE PLAN NOTE 1 ON THIS SHEET). VERIFY THAT THIS IS THE VENT PIPE FROM THE STEAM SAFETY VALVE AND CAP OFF AT WALL. IF THIS PIPE GOES DIRECTLY TO THE OUTSIDE CAP OFF AT EXTERIOR POINT. IF THIS PIPE TIES INTO ANOTHER VENT, CAP OFF TEE AND PIPE AT THAT POINT OF CONNECTION.
- 8 EXISTING MAU-15 TO BE REMOVED (SEE PLAN NOTE 1 ON THIS SHEET). LOCATE THE VENT PIPE FROM THE STEAM SAFETY VALVE AND CAP OFF AT WALL. IF THIS PIPE GOES DIRECTLY TO THE OUTSIDE CAP OFF AT EXTERIOR POINT. IF THIS PIPE TIES INTO ANOTHER VENT, CAP OFF TEE AND PIPE AT THAT POINT OF CONNECTION.

REQUIRED STEAM AND CONDENSATE RETURN PIPE DEMOLITION SHALL BE APPROVED BY VA COTR. ANY STEAM SHUTDOWN SHALL BE COORDINATED WITH COTR.



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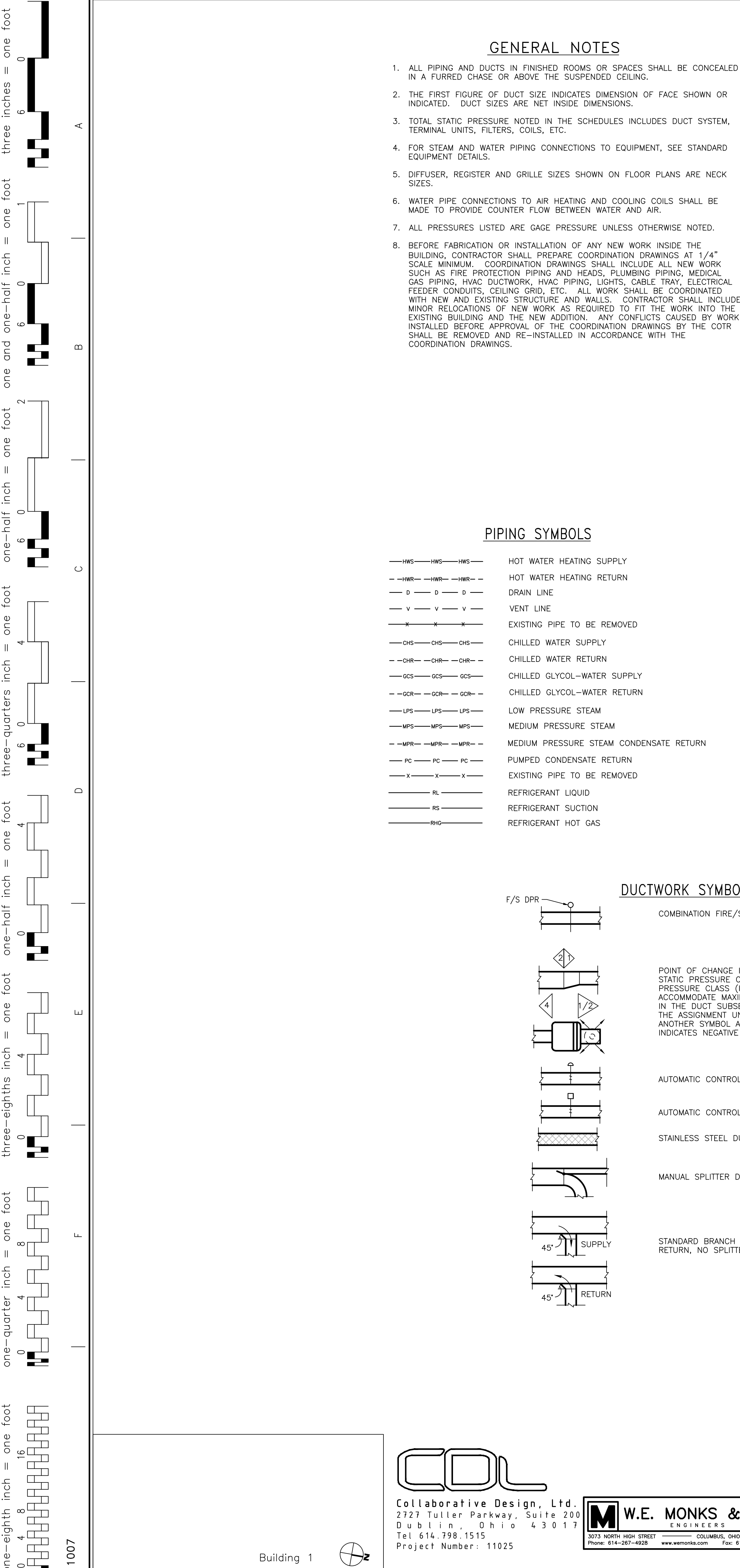
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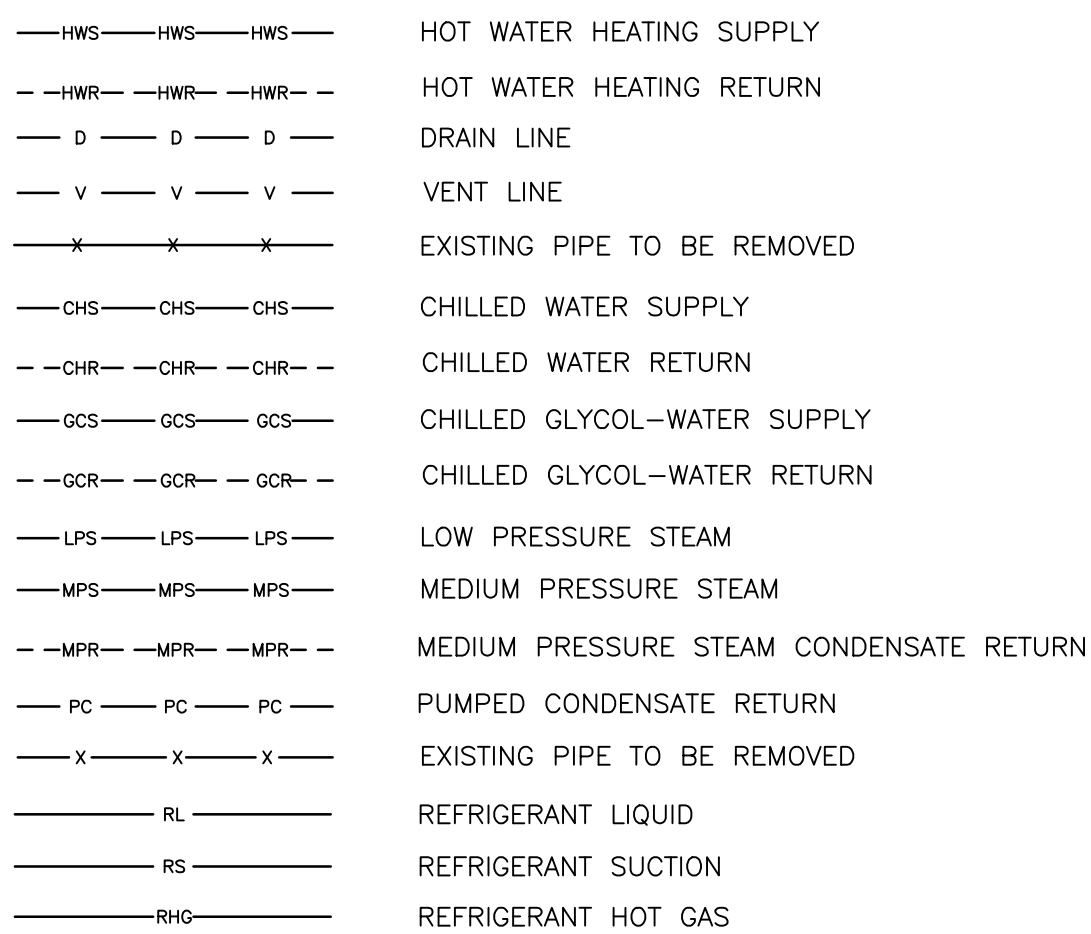




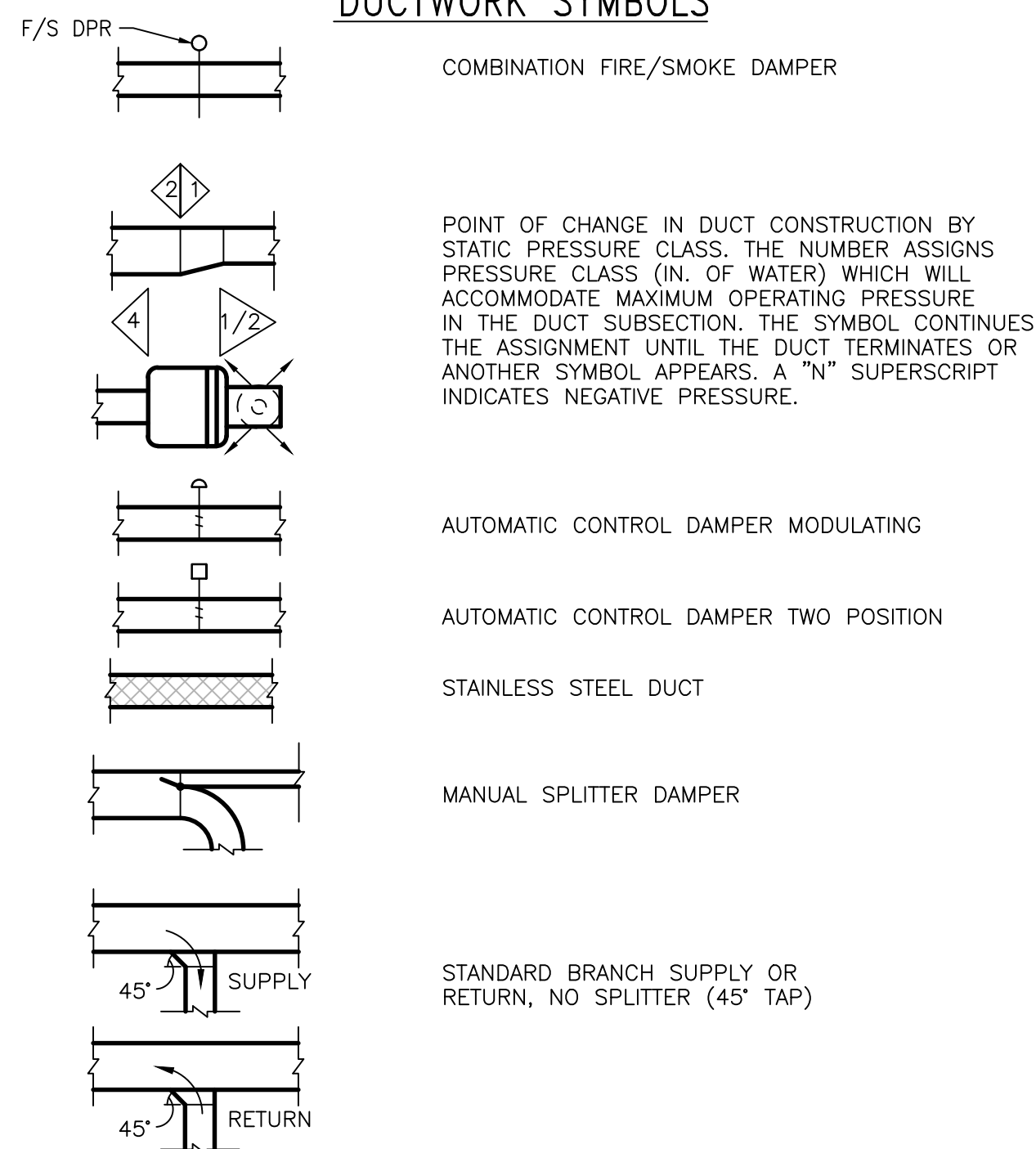
GENERAL NOTES

- 1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.
- 2. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
- 3. TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- 4. FOR STEAM AND WATER PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD EQUIPMENT DETAILS.
- 5. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
- 6. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE TO PROVIDE COUNTER FLOW BETWEEN WATER AND AIR.
- 7. ALL PRESSURES LISTED ARE GAGE PRESSURE UNLESS OTHERWISE NOTED.
- 8. BEFORE FABRICATION OR INSTALLATION OF ANY NEW WORK INSIDE THE BUILDING, CONTRACTOR SHALL PREPARE COORDINATION DRAWINGS AT 1/4" SCALE MINIMUM. COORDINATION DRAWINGS SHALL INCLUDE ALL NEW WORK SUCH AS FIRE PROTECTION PIPING AND HEADS, PLUMBING PIPING, MEDICAL GAS PIPING, HVAC DUCTWORK, HVAC PIPING, LIGHTS, CABLE TRAY, ELECTRICAL FEEDER CONDUITS, CEILING GRID, ETC. ALL WORK SHALL BE COORDINATED WITH NEW AND EXISTING STRUCTURE AND WALLS. CONTRACTOR SHALL INCLUDE MINOR RELOCATIONS OF NEW WORK AS REQUIRED TO FIT THE WORK INTO THE EXISTING BUILDING AND THE NEW ADDITION. ANY CONFLICTS CAUSED BY WORK INSTALLED BEFORE APPROVAL OF THE COORDINATION DRAWINGS BY THE COTR SHALL BE REMOVED AND RE-INSTALLED IN ACCORDANCE WITH THE COORDINATION DRAWINGS.

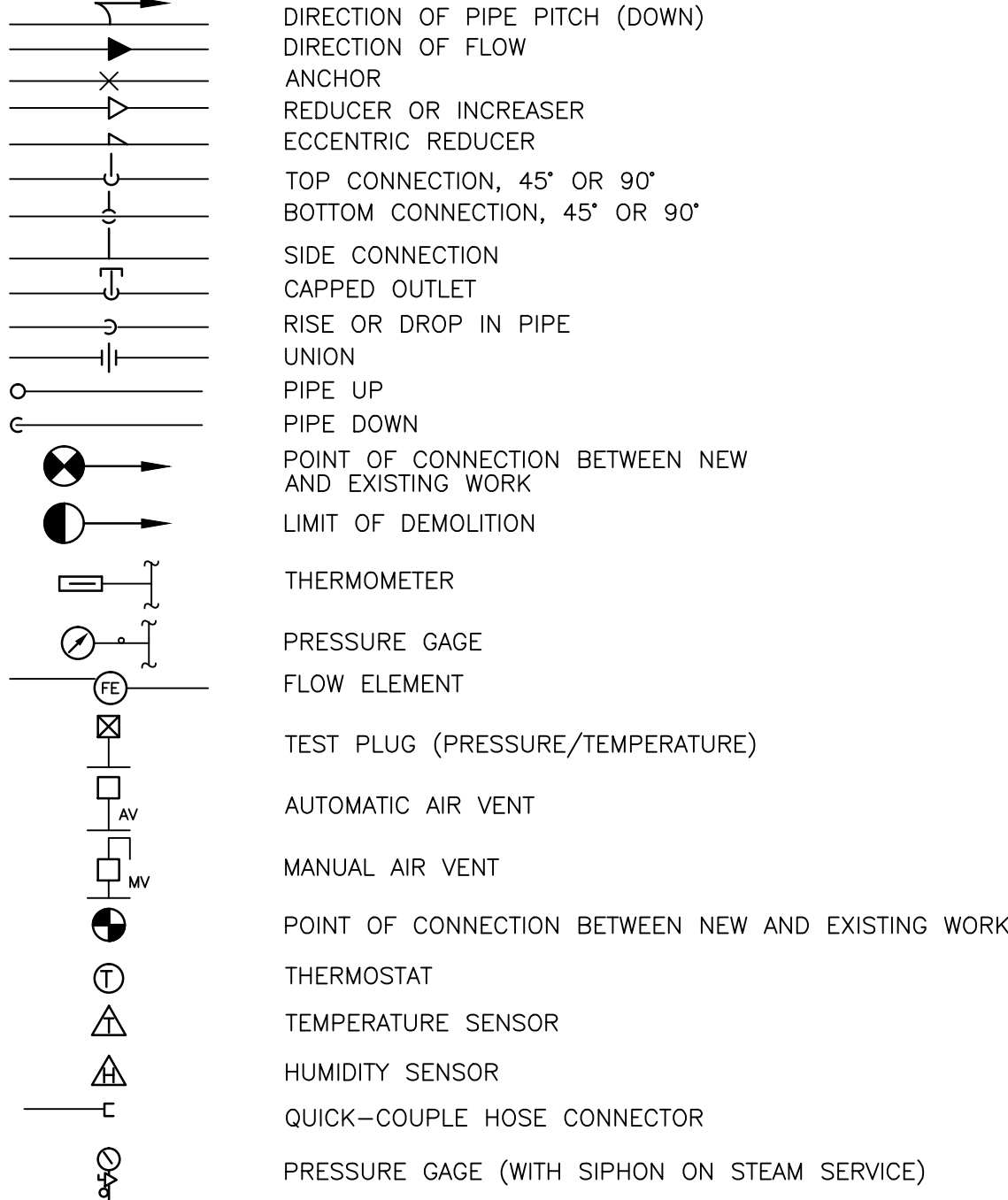
PIPING SYMBOLS



DUCTWORK SYMBOLS

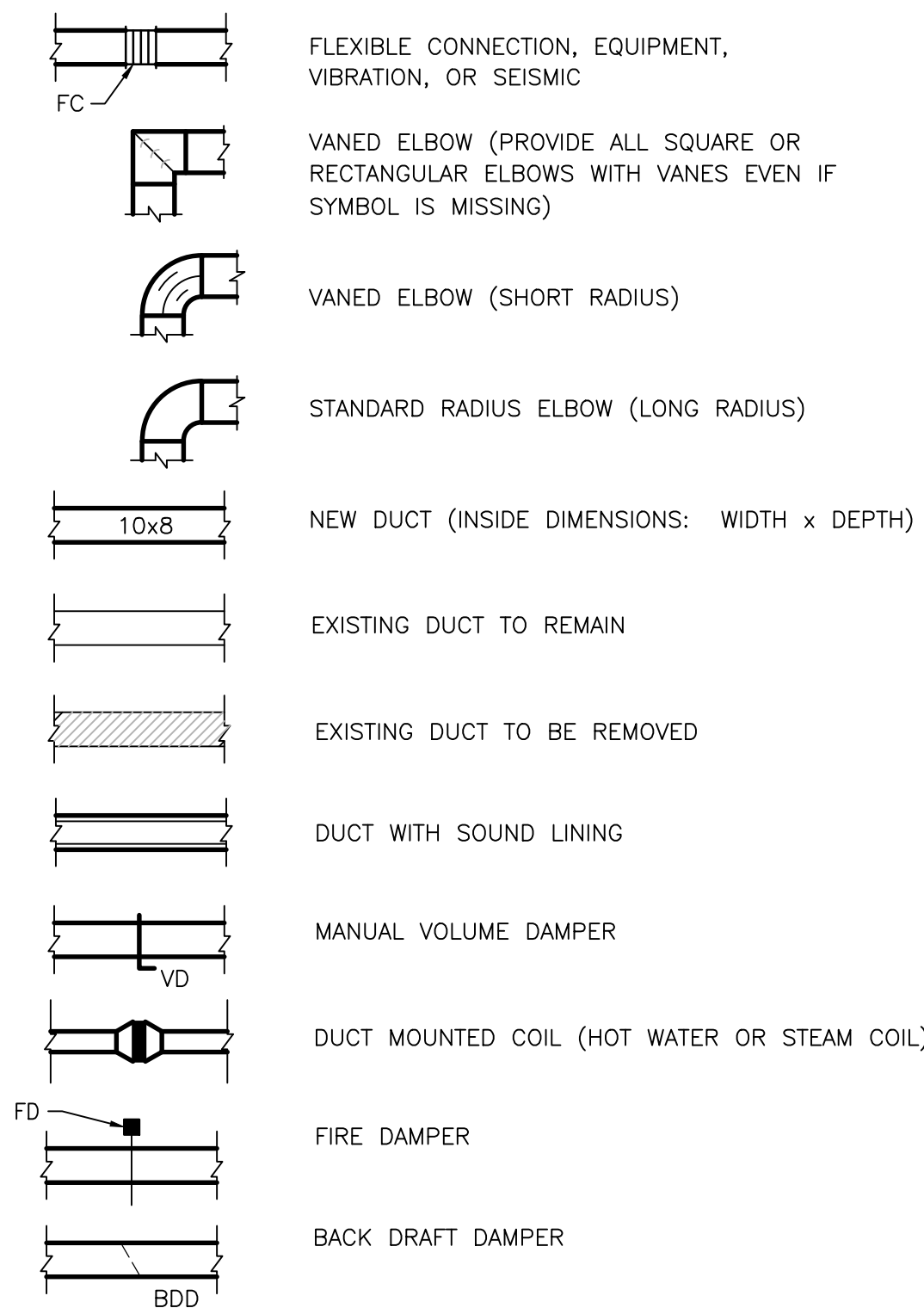


GENERAL SYMBOLS

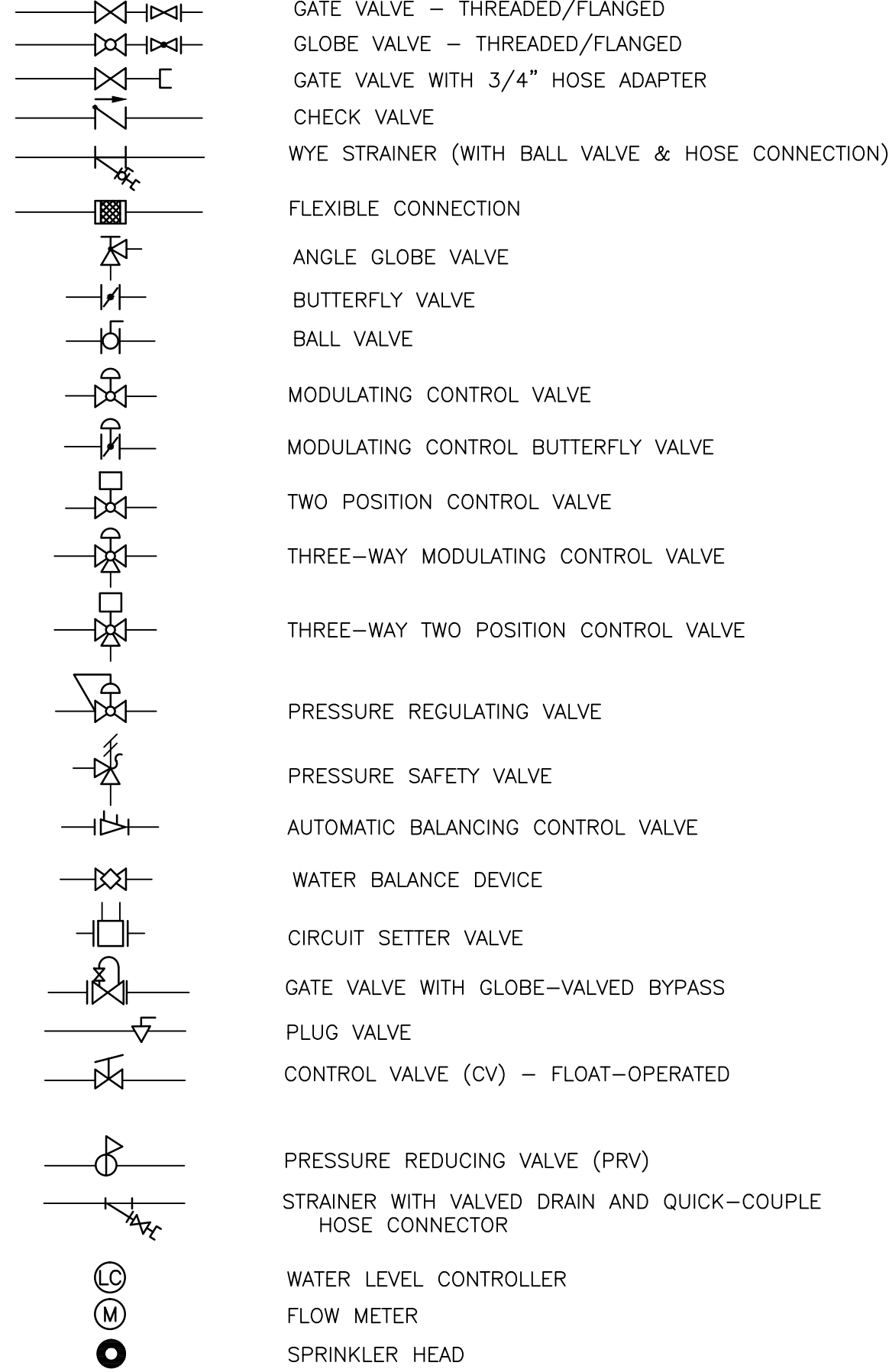


DEDUCT ALTERNATE 1:  
DEDUCT ALL TESTING  
AND CLEANING OF  
EXISTING DUCTWORK  
ASSOCIATED WITH UNITS  
MAU-14, 15, 30 & 31.

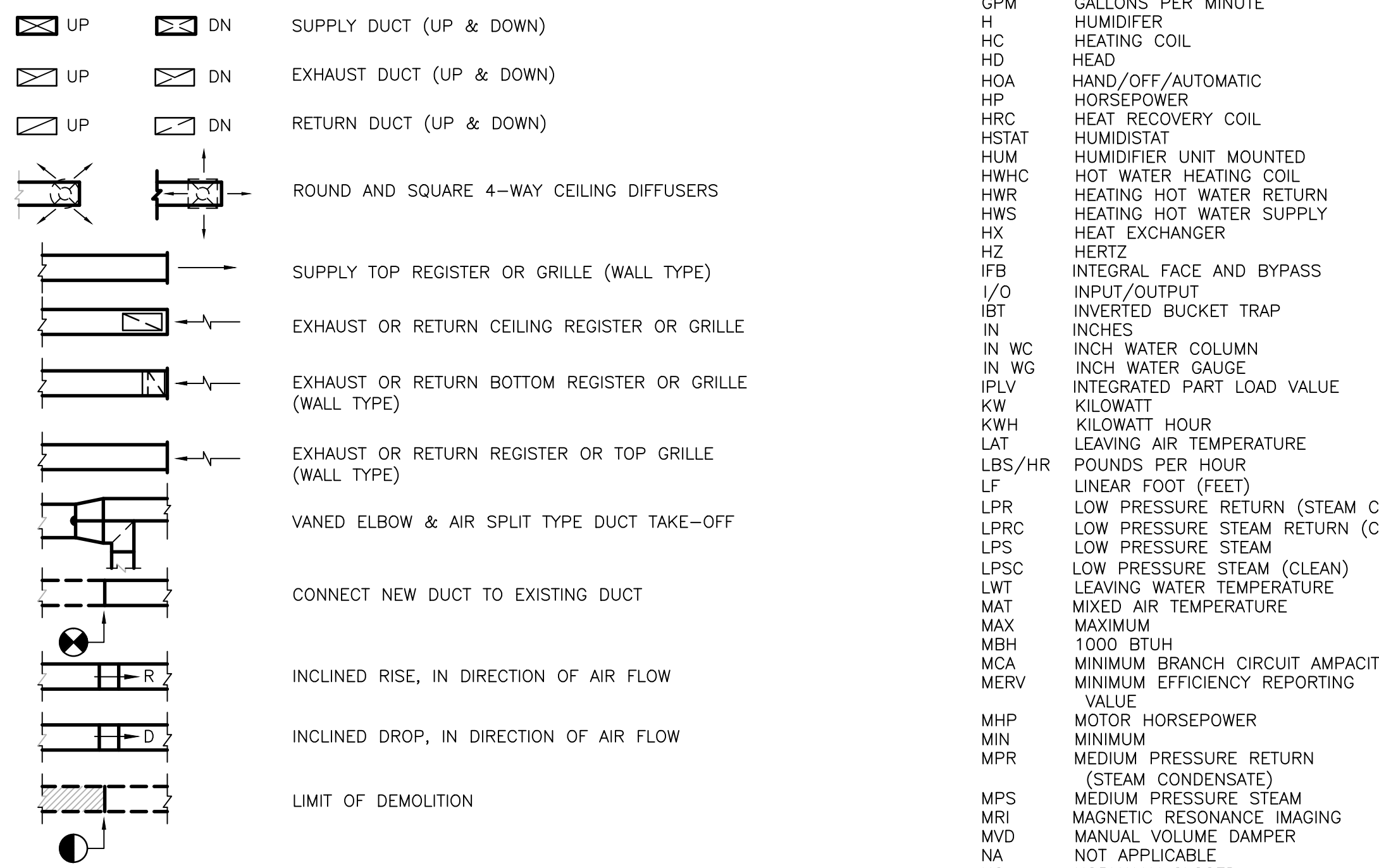
DUCTWORK SYMBOLS



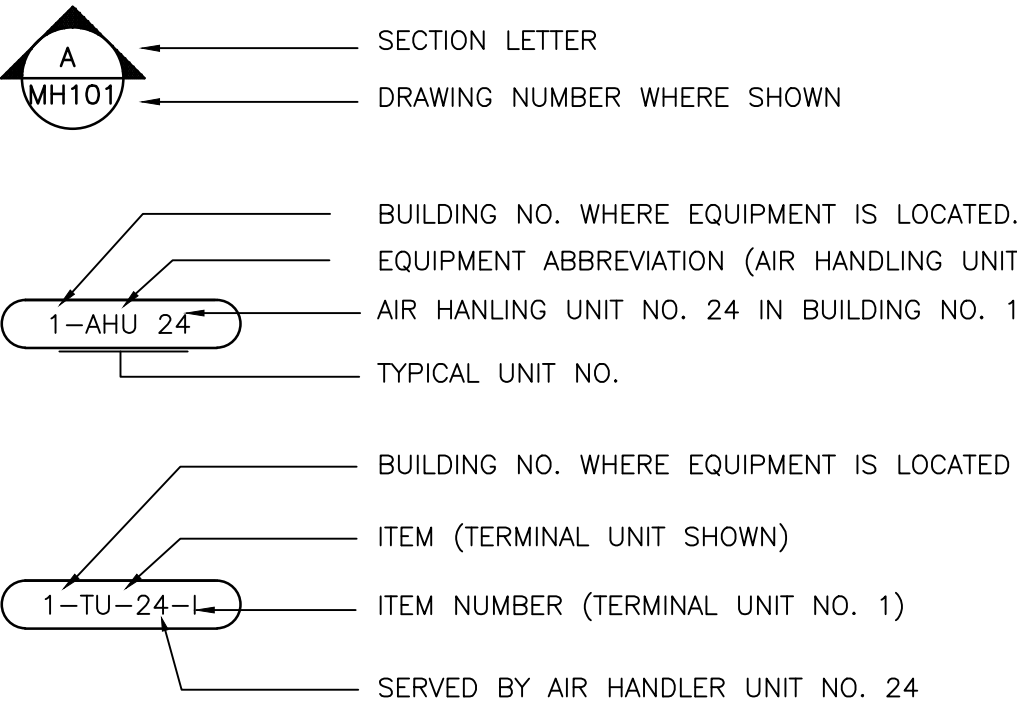
VALVE SYMBOLS



DUCTWORK SYMBOLS



DRAWING SYMBOLS



ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	SQ FT	SQUARE FOOT (FEET)
AV	AUTOMATIC AIR VENT	SR	SUPPLY AIR REGISTER
ACC	AIR COOLED CONDENSER	SSHX	STEAM TO STEAM HEAT EXCHANGER
ACCH	AIR COOLED CHILLER	ST	STEAM TRAP
ACCU	AIR COOLED CONDENSING UNIT	SV	STEAM PRESSURE REDUCING VALVE
AD	ACCESS DOOR	SWHX	STEAM TO WATER HEAT EXCHANGER
AFF	ABOVE FINISHED FLOOR	TAB	TESTING, ADJUSTING, BALANCE
AHU	AIR-HANDLING UNIT	TD	TEMPERATURE DIFFERENCE
AMP	AMPERAGE	TG	TRANSFER GRILLE
AP	ACCESS PANEL	TP	TRAP
APD	AIR PRESSURE DROP	TSP	TOTAL STATIC PRESSURE
AS	AIR SEPARATOR	TU	TERMINAL UNIT
BDD	BACKDRAFT DAMPER	VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
BFP	BACKFLOW PREVENTER	VFD	VARIABLE FREQUENCY DRIVE
BHP	BRAKE HORSEPOWER	VV	VARIABLE AIR VOLUME TERMINAL UNIT
BR	BOTTOM REGISTER	WB	WET-BULB (TEMPERATURE)
BTUH	BRITISH THERMAL UNIT PER HOUR		
CC	COOLING COIL		
CCD	COOLING COIL CONDENSATE DRAIN		
CD	CEILING DIFFUSER		
CFM	CUBIC FEET PER MINUTE		
CG	CEILING GRILLE		
CHW	CHILLER WATER		
CHR	CHILLED WATER RETURN		
CHS	CHILLED WATER SUPPLY		
CO	CLEAN OUT		
COP	COEFFICIENT OF PERFORMANCE		
CP	CONDENSATE PUMP		
CR	CEILING REGISTER		
CV	CONSTANT VOLUME		
CW	COLD WATER (POTABLE)		
CWCC	CHILLED WATER COOLING COIL DAMPER - AUTOMATIC		
D	DRY-BULB TEMPERATURE		
DDC	DIRECT DIGITAL CONTROLS		
DEG	DEGREE		
DIA	DIAMETER		
DPS	DIFFERENTIAL PRESSURE SENSOR		
DXCC	DIRECT EXPANSION COOLING COIL		
EA	EXHAUST AIR		
EAT	ENTERING AIR TEMPERATURE		
ECC	ENGINEERING CONTROL CENTER		
EER	ENERGY EFFICIENCY RATIO		
EF	EXHAUST FAN		
EG	EXHAUST GRILLE		
END	END OF MAIN DRIP (STEAM)		
ENT	ENTERING		
ER	EXHAUST REGISTER		
ESP	EXTERNAL STATIC PRESSURE		
ET	EXPANSION TANK		
EW	ENTERING WATER TEMPERATURE		
EX	EXISTING		
F	FAHRENHEIT		
F&T	FLOAT AND THERMOSTATIC		
FC	FLEXIBLE CONNECTION		
FD	FIRE DAMPER		
FF	FINAL FILTER		
FLRD	FLOOR DRAIN		
FTM	FEET PER MINUTE		
FPS	FEET PER SECOND		
FS	FLOW SWITCH		
F/SDPR	COMBINATION FIRE SMOKE DAMPER		
FSTAT	FREESTAT		
FT	FEET		
GAL	GALLONS		
GPM	GALLONS PER MINUTE		
H	HUMIDIFIER		
HC	HEATING COIL		
HD	HEAD		
HOA	HAND/OFF/AUTOMATIC		
HP	HORSEPOWER		
HRC	HEAT RECOVERY COIL		
HSTAT	HUMIDISTAT		
HUM	HUMIDIFIER UNIT MOUNTED		
HHWC	HOT WATER HEATING COIL		
HWR	HEATING HOT WATER RETURN		
HWS	HEATING HOT WATER SUPPLY		
HX	HEAT EXCHANGER		
HZ	HERTZ		
IFB	INTEGRAL FACE AND BYPASS		
I/O	INPUT/OUTPUT		
IBT	INVERTED BUCKET TRAP		
IN	INCHES		
IN WC	INCH WATER COLUMN		
IN WG	INCH WATER GAUGE		
IPLV	INTEGRATED PART LOAD VALUE		
KW	KILOWATT		
KWH	KILOWATT HOUR		
LAT	LEAVING AIR TEMPERATURE		
LBS/HR	POUNDS PER HOUR		
LF	LINEAR FOOT (FEET)		
LPR	LOW PRESSURE RETURN (STEAM CONDENSATE)		
LPRC	LOW PRESSURE STEAM RETURN (CLEAN)		
LPS	LOW PRESSURE STEAM		
LPSC	LOW PRESSURE STEAM (CLEAN)		
LWT	LEAVING WATER TEMPERATURE		
MAT	MIXED AIR TEMPERATURE		
MAX	MAXIMUM		
MBH	1000 BTUH		
MCA	MINIMUM BRANCH CIRCUIT AMPACITY		
MERV	MINIMUM EFFICIENCY REPORTING VALUE		
MHP	MOTOR HORSEPOWER		
MIN	MINIMUM		
MPR	MEDIUM PRESSURE RETURN (STEAM CONDENSATE)		
MPS	MEDIUM PRESSURE STEAM		
MRI	MAGNETIC RESONANCE IMAGING		
MVD	MANUAL VOLUME DAMPER		
NA	NOT APPLICABLE		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN		
NTS	NOT TO SCALE		
OA	OUTSIDE AIR		
OD	OUTSIDE DIAMETER		
P	PUMP		
PD	PRESSURE DROP		
PF	PRE-FILTER		
PG	PRESSURE GAGE		
PHC	PREHEAT COIL		
PRV	PRESSURE REGULATING VALVE		
PSI	POUNDS PER SQUARE INCH		
PSIG	POUNDS PER SQUARE INCH -GAGE		
PSV	PRESSURE SAFETY VALVE		
RA	RETURN AIR		
RAT	RETURN AIR TEMPERATURE		
R/E	RETURN OR EXHAUST		
RF	RETURN FAN		
RG	RETURN GRILLE		
RH	RELATIVE HUMIDITY		
RHC	REHEAT COIL		
RLA	RUN LOAD AMPERE		
RR	RETURN REGISTER		
RTU	ROOF TOP UNIT		
SA	SUPPLY AIR		
SAT	SUPPLY AIR TEMPERATURE		
SD	SUPPLY AIR DIFFUSER		
SDPR	SMOKE DAMPER		
SF	SUPPLY FAN		
SG	SUPPLY AIR GRILLE		
SH	STEAM HUMIDIFIER		
SP	STATIC PRESSURE		
SPS	STATIC PRESSURE SENSOR		

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JOHN D. BERRYMAN, M. D.

DRAWING TITLE:  
MECHANICAL SYMBOLS  
ABBREVIATIONS, & GENERAL NOTES  
PROJECT TITLE:  
HVAC NEGATIVE AIR CORRECTIONS

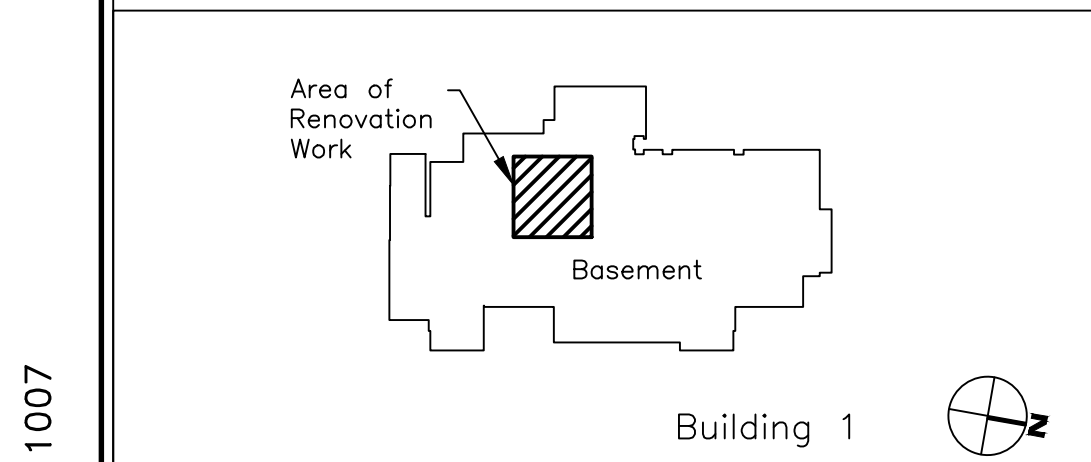
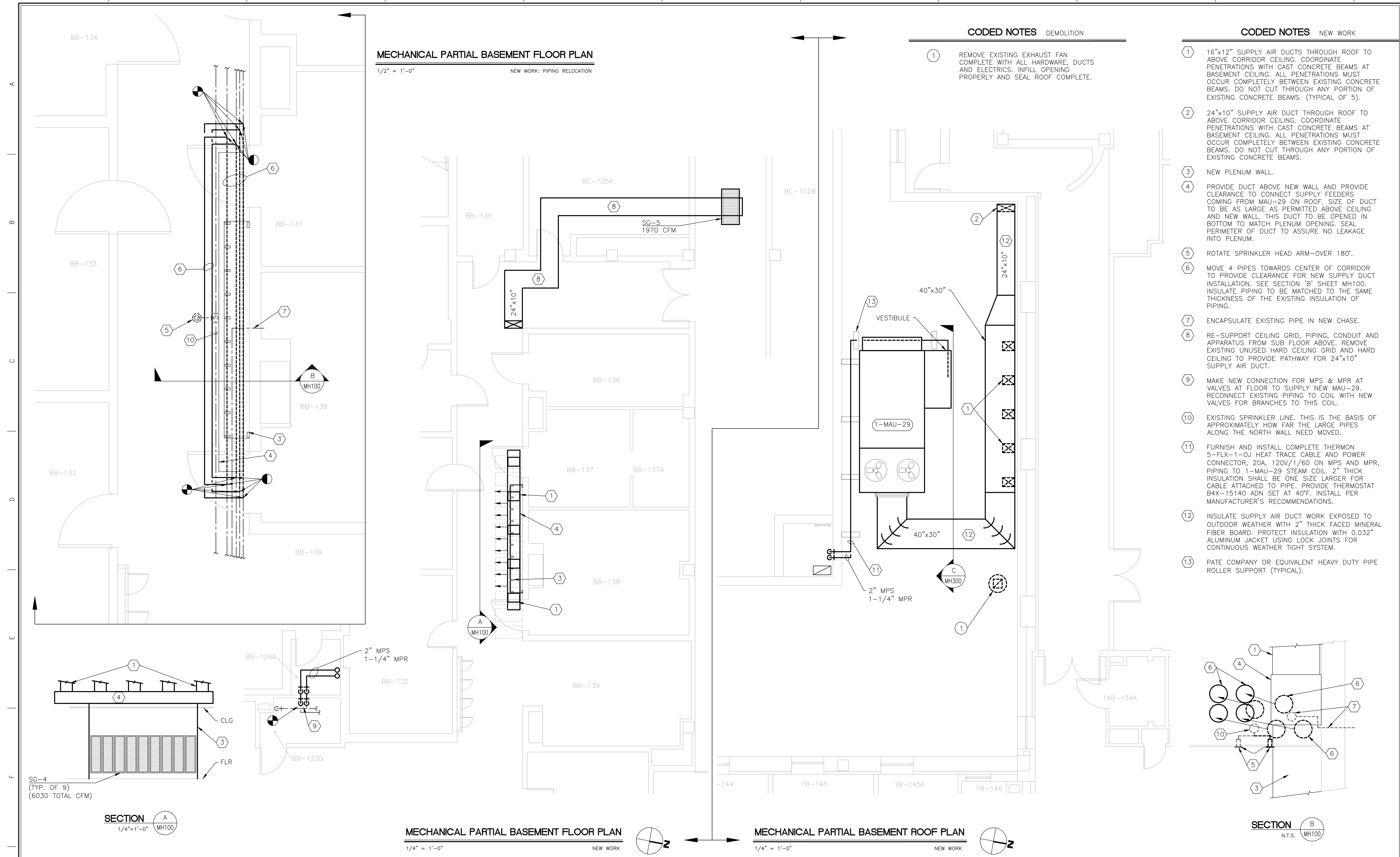
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REV.  
SCALE

DRAWING No.  
MH001  
PROJECT No.  
517-11-105  
DRAWN BY:  
PDC  
CHECKED BY:  
JPA

Veterans Affairs  
Medical Center  
200 Veterans Av  
Beckley, WV.  
25801



three inches = one foot  
one and one-half inch = one foot  
one-half inch = one foot  
three-quarters inch = one foot  
one-half inch = one foot  
three-eighths inch = one foot  
one-quarter inch = one foot  
one-eighth inch = one foot



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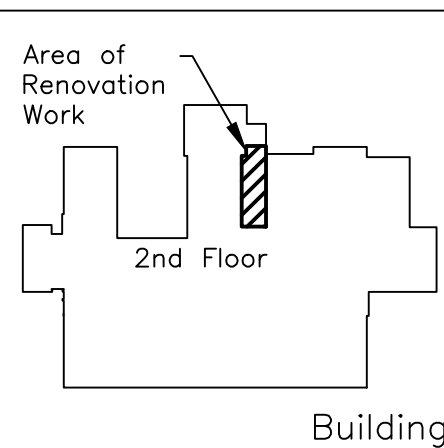
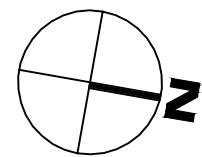
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- ① INSTALL NEW STEAM HEATING COIL AND NEW PIPING AND APPARATUS (SEE DETAIL 16, SHEET MH501). PNEUMATIC CONTROL VALVE TO BE REPLACED WITH DDC CONTROL VALVE AND WIRED COMPLETE BACK TO DDC CONTROL IN THIS ROOM. (PIPING SIZE TO BE FIELD VERIFIED BUT SEEM TO BE THE FOLLOWING SIZES, SUPPLY 1-1/2" AND RETURN 1").
- ② INSTALL NEW CHILLED WATER COIL AND NEW PIPING AND APPARATUS (SEE DETAIL 12, SHEET MH501). PNEUMATIC CONTROL VALVE TO BE REPLACED WITH DDC CONTROL VALVE AND WIRED COMPLETE BACK TO DDC CONTROL IN THIS ROOM. (PIPING SIZE TO BE FIELD VERIFIED BUT SEEM TO BE THE FOLLOWING SIZES, SUPPLY AND RETURN 2").
- ③ NEW VFD FOR RETURN AIR FAN. WIRING PROVIDED BY ELECTRICAL CONTRACTOR.
- ④ REBALANCE AIR HANDLING UNIT TO OBTAIN MINIMUM OF 2200 CFM OF OUTSIDE AIR AND 6370 CFM OF SUPPLY AIR. MODIFY SEQUENCE OF OPERATIONS SO THAT RETURN/RELIEF FAN IS MODIFIED TO PROVIDE MORE OUTSIDE AIR TO THE SPACES.

MECHANICAL PARTIAL SECOND FLOOR PLAN ROOM 2A-145

1/4" = 1'-0" NEW WORK



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JOHN D. BERRYMAN, M. D.

DRAWING TITLE: PARTIAL SECOND FLOOR PLAN MECHANICAL NEW WORK		
PROJECT TITLE: HVAC NEGATIVE AIR CORRECTIONS		
DATE 07/06/2012	REV.	SCALE

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PROJECT No.	517-11-105
DRAWN BY:	PDC
CHECKED BY:	JPA

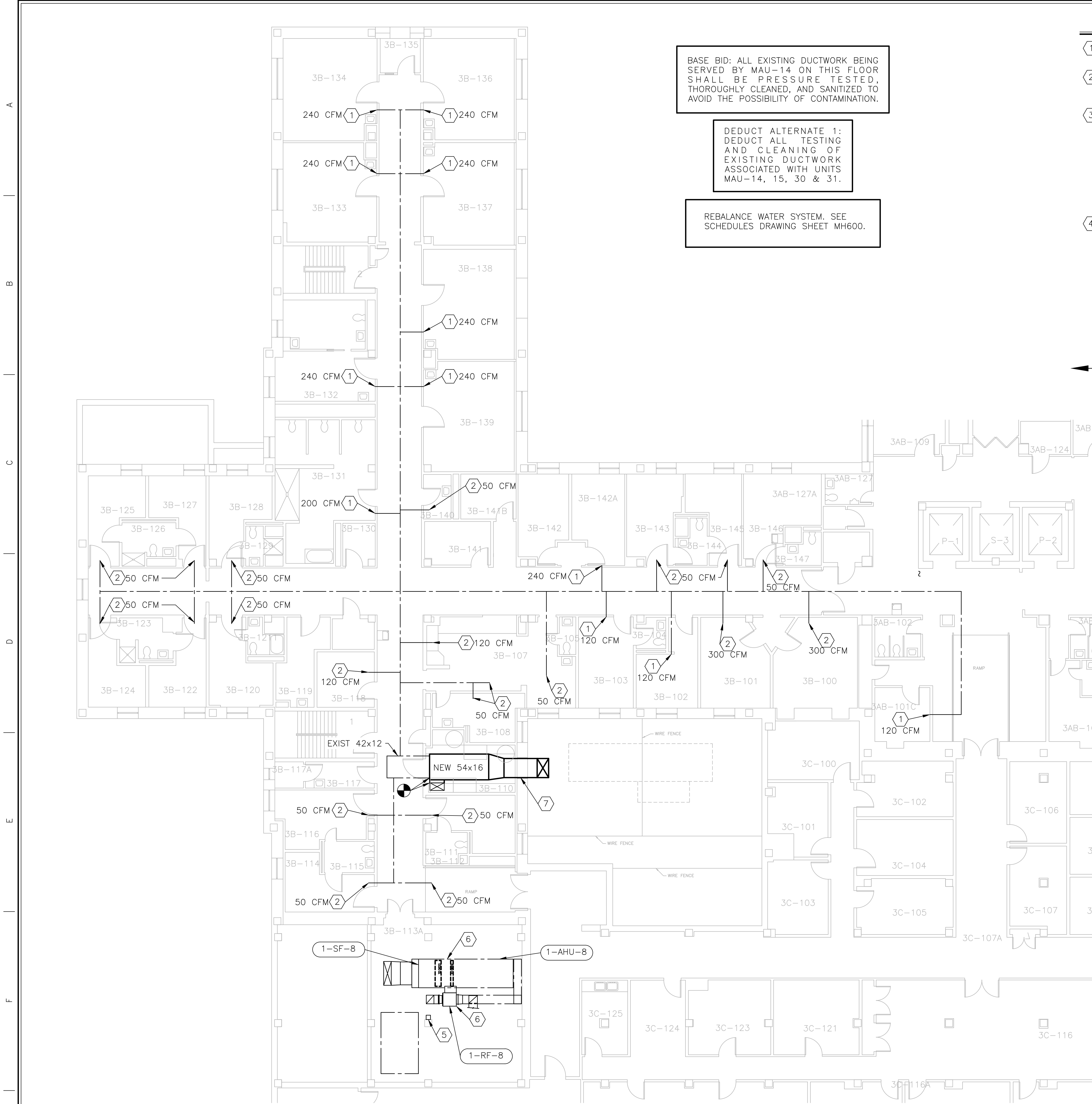
Veterans Affairs Medical Center 200 Veterans Av Beckley, WV. 25801	PUTTING 
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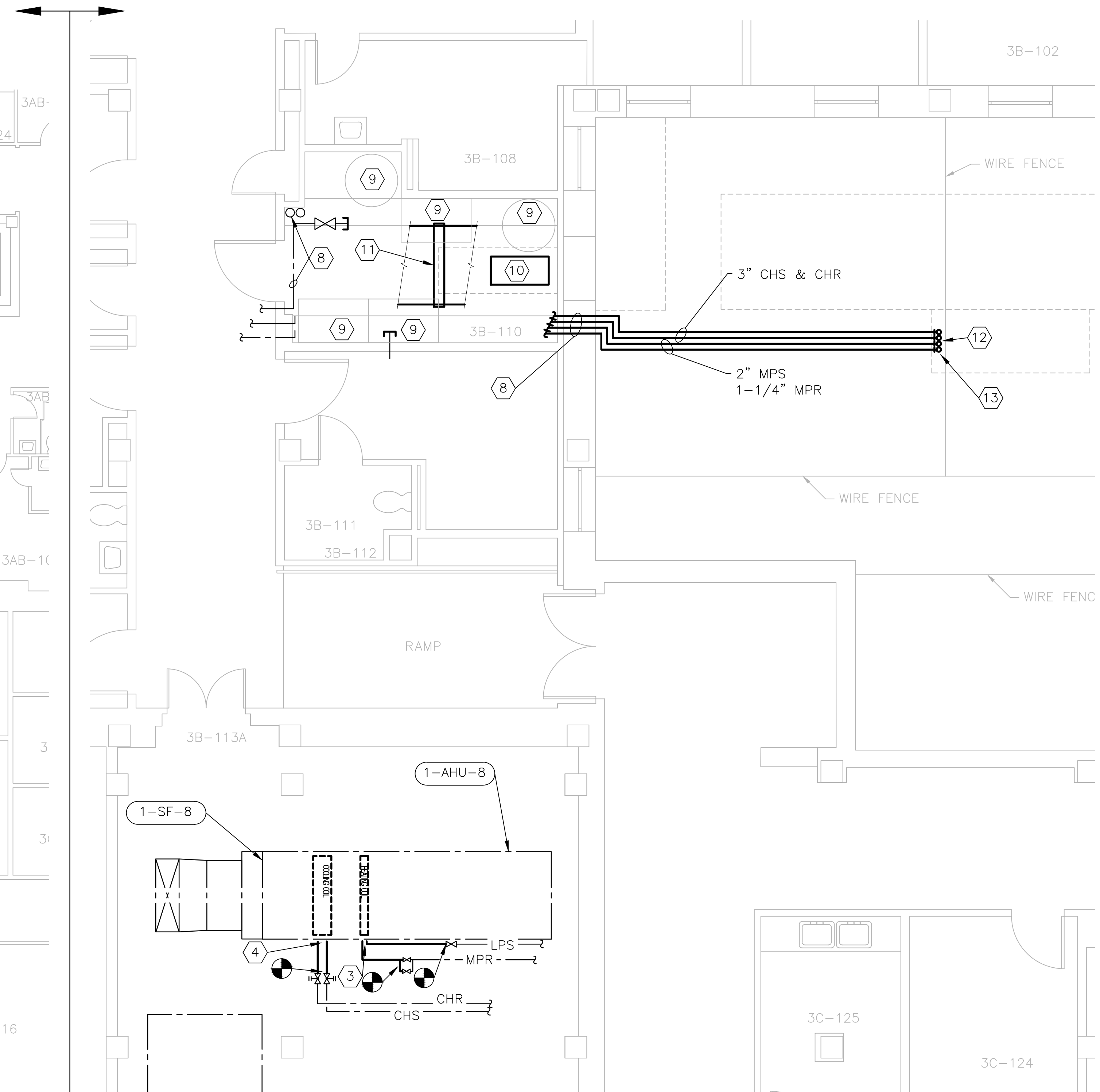
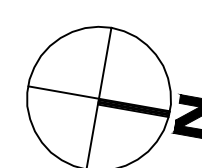
**VETERANS  
FIRST**



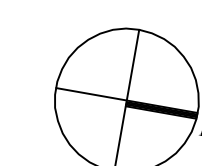
11007



DUCT WORK NEW WOR



PIPING NEW WORK



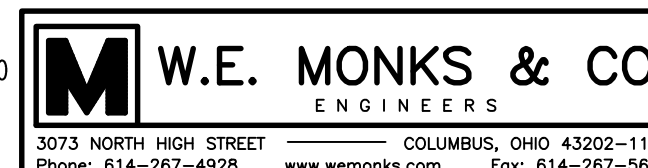
REBALANCE WATER SYSTEM. SEE  
SCHEDULES DRAWING SHEET MH600.

- |   |   |
|---|---|
| <p>① OUTSIDE AIR INTRODUCED THROUGH GRILLE. BALANCE TO INDICATED CFM.</p> <p>② OUTSIDE AIR INTRODUCED THROUGH FAN COIL UNIT. BALANCE TO INDICATED CFM.</p> <p>③ INSTALL NEW STEAM HEATING COIL AND NEW PIPING AND APPARATUS (SEE DETAIL 16, SHEET MH501). PNEUMATIC CONTROL VALVE TO BE REPLACED WITH DDC CONTROL VALVE AND WIRED COMPLETE BACK TO DDC CONTROL IN THIS ROOM. (PIPING SIZE TO BE FIELD VERIFIED BUT SEEM TO BE THE FOLLOWING SIZES, SUPPLY 2" AND RETURN 1-1/2").</p> <p>④ INSTALL NEW CHILLED WATER COILS (THIS UNIT HAS TWO COILS) AND NEW PIPING AND APPARATUS (SEE DETAIL 12, SHEET MH501). PNEUMATIC CONTROL VALVE TO BE REPLACED WITH DDC CONTROL VALVE AND WIRED COMPLETE BACK TO DDC CONTROL IN THIS ROOM. (PIPING SIZE TO BE FIELD VERIFIED BUT SEEM TO BE THE FOLLOWING SIZES, SUPPLY 2-1/2" AND RETURN 2-1/2").</p> | <p>⑤ NEW VFD FOR RETURN AIR FAN (1-RF-8). WIRING PROVIDED BY ELECTRICAL CONTRACTOR.</p> <p>⑥ REBALANCE AIR HANDLING UNIT TO OBTAIN MINIMUM OF 7350 CFM OF OUTSIDE AIR AND 9490 CFM OF SUPPLY AIR. MODIFY SEQUENCE OF OPERATIONS SO THAT RETURN/RELIEF FAN IS MODIFIED TO PROVIDE MORE OUTSIDE AIR TO THE SPACES.</p> <p>⑦ NEW 40"x24" FROM MAU-14 ON ROOF. DUCT TO PASS THROUGH EXISTING WALL OPENING. SEAL OFF OPENING AROUND DUCT COMPLETE. SEE DRAWING SHEET MH105 FOR CONTINUATION.</p> <p>⑧ RE-CONNECT NEW PIPING TO EXISTING CHS, CHR, MPS &amp; MPR RET AND ROUTE TO NEW MAU-14 ON ROOF. SEE SECTION 'E' ON DRAWING SHEET MH105.</p> <p>⑨ REVERSE OSMOSIS SYSTEM SEE PLUMBING DRAWING SHEET PL100.</p> <p>⑩ STEAM HUMIDIFIER GENERATOR. SEE PIPING DETAIL 6 DRAWING SHEET MH500.</p> |
|   | <p>⑪ DUCT SECTION HUMIDIFIER. SEE PIPING DETAIL 7 DRAWING SHEET MH500.</p> <p>⑫ ROUTE NEW CHS, CHR, MPS &amp; MPR THROUGH ROOF TO MAU-14 ON ROOF. SEE DRAWING SHEET MH105 FOR CONTINUATION.</p> <p>⑬ FROM BELOW ROOF STRUCTURE AND UP TO MAU-14 FURNISH AND INSTALL COMPLETE THERMON 5-FLX-1-OJ HEAT TRACE CABLE AND POWER CONNECTOR, 20A, 120V/1/60 ON MPS, LPR, CHS AND CHR PIPING TO 1-MAU-15 STEAM COIL AND CHILLED WATER COILS. 2" THICK INSULATION SHALL BE ONE SIZE LARGER FOR CABLE ATTACHED TO PIPE. PROVIDE THERMOSTAT B4X-15140 ADN SET AT 40°F. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.</p>   |

Building 1



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